TECHNOLOGY DEPT.

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A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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U. S. Plants in Canada Swing Into Production of New Car Models for 1933

Following Announcements in This Country, Chrysler And General Motors Units Recall Canadian Workers

Toronto, Ont., Nov. 29.—Production is rapidly getting under way in the Canadian plants, following announcements of new models in this country.

Production of the new Plymouth models has commenced at the Chrysler plant in Windsor, with 750 to 1,000 men returned to their jobs. John D. Mansfield, president of the Chrysler Corporation of Canada, said today that Plymouth shipments for November to date had totaled three times the volume for any previous November, and that December orders assure a similar showing for that month.

List prices of the new Plymouth six, just announced, place the new car as much as $95 lower than the corresponding prices on the 1932 four-cylinder model. The 1933 six is being offered in Canada in seven body types, the f. o. b. Windsor factory prices of which are as follows: Four-door standard sedan, $750; four-door special sedan, $785; business coupe, $675; standard coupe with rumble seat, $730; special coupe with rumble seat, $675; standard convertible coupe, $790; special convertible coupe, $843. Air-wheels, using 16x6.00 tires on 16-inch wire wheels, are offered as extra equipment.

General Motors of Canada is swinging into production at its Oshawa plant on a new McLaughlin-Buick. It is understood that Chevrolet production will begin within a few days.

N. A. F. C. ANNOUNCES PROGRAM FOR MEETING

Chicago, Nov. 29.—The complete program for the ninth annual meeting and financing conference of the National Association of Finance Companies, to be held at the Jung Hotel, New Orleans, La., December 6 to 9, is announced today by the association.

John N. Willys, chairman of the board of the Willys-Overland Company, Toledo, will be one of the principal speakers at the opening session Tuesday morning.

The complete program follows:

TUESDAY MORNING, DEC. 6

9.00 A. M.—Registration, distribution of badges, entertainment tickets, etc.

10.30 A. M.—Conference called to order by Victor L. Brown, president National Association of Finance Companies. Appointment of Committee on Resolutions.

10.45 A. M.—"Finance Companies —The Banker's Viewpoint," by Charles de B. Claiborne, vice-president Whitney National Bank, New Orleans.

11.30 A. M.—"Men, Money, Motors and Business," by Hon. John N. Willys, chairman Willys-Overland Company, Toledo, former United States ambassador to Poland.

12.00 M.—"General Aspects of Finance Company Operations," by Howard L. Wynegar, president Commercial Credit Company, Baltimore.

12.30 P. M.—Recess for luncheon.

TUESDAY AFTERNOON

2.00 P. M.—"Depression Fallacies," by Milan V. Ayres, economic analyst, Chicago.

2.45 P. M.—Business meeting, N.

(Continued on Page 12)

N. J. TRUCK OWNERS PLAN FOR BIG FIGHT AGAINST BAD BILLS

Paterson, N. J., Nov. 29.—Aroused by the unmistakable signs of considerable restrictive legislation against their interest, representative motor truck owners and operators held their first council of war in the office of the Chamber of Commerce here. The groundwork for a large, vigorous counter campaign to preserve the trucking industry was laid out.

Before the legislative season has finished, the truckmen believe they will have had a big fight on their hands and the attacks will come from various quarters.

Their immediate concern, however, is what they describe as the iniquitious signal device law passed by the last New Jersey Legislature. The enforcement of this measure, it has been said, would not only make it necessary for every one of the 140,000 trucks in the state to have the electrical signal equipment, but it could also apply to horsedrawn vehicles.

Those at the meeting were informed that definite plans for attacking the law have already been formulated. It is planned to retain eminent counsel for the truckmen and then make an effort to have the act repealed at the first session of the state Legislature. It can successfully be attacked in the

(Contnued on Page 7)

STANDARD LIMITS FOR SIZE AND SPEED OF TRUCK ADVOCATED

Washington, Nov. 29.—Standard maximum weight, height, length and speed limits for motor vehicles, limiting buses and trucks to a speed of forty-five miles an hour, and barring all vehicles more than thirty-five feet long from the highways, except by special permit, were recommended for adoption by the states in a statement issued by the American Association of State Highway Officials, following consideration of the problem at its recent annual convention in Washington, D. C.

Under the suggested standard requirements, solid-tire vehicles would be limited to a speed of ten miles an hour, no vehicle with or without load could exceed a height of twelve feet six inches, combinations of vehicles could consist of not more than two vehicles with a total length of not more than forty-five feet, and no wheel could carry a load of more than 8,000 pounds. The load limitations, it was explained, should not apply to metropolitan areas if the state so desires.

The recommendations were described as necessary to establish one of the fundamental prerequisites of highway design, to assure safety and to promote efficiency.

Commercial Vehicle Sales Run 38½% Behind Volume of 1931

Returns From All but Two States for October Show The Month Practically on Level with September; Ten Months' Total Near 160,319

Detroit, Nov. 29.—Commercial vehicle sales figures for October have now been released by R. L. Polk for forty-six states and the District of Columbia. Only the states of Colorado and Wyoming remain to be heard from to complete the month's record.

Total October commercial sales in the territory mentioned amounted to 14,933 units, which compares with 15,002 in September, 1932 in the same states and with 24,282 in October, 1931. October sales are running just a shade under those for September this year, these two months normally showing a slight difference either way. October, 1932, is running just a shade over 38½ per cent. behind the October, 1931, total.

With only Colorado and Wyoming missing, the commercial vehicles sales for the first ten months of 1932 total 160,144. Those two states will not add more than 175 units to the total. This figure compares with 285,097 for the first ten months of 1931.

Last year the truck sales in November and December totaled 28,730 units. If these sales in November and December this year continue to run behind last year's record in the same ratio that the rest of the year has done, the total for the last two months of 1932 will be about 16,670 commercial units. This would put the 1932 total commercial vehicle sales at about 178,000 units, comparing with 313,884 vehicles sold by the truck manufacturers in 1931.

The truck makers can solace themselves with the fact that their ratio of reduction from their 1931 sales levels is going to be less than that of the passenger car manufacturers.

R. R.'S OPPOSE RATES ON LOADED TRUCKS BY THE COTTON BELT

Washington, Nov. 29.—Cancellation by the Interstate Commerce Commission of the vehicle container schedules filed by the St. Louis Southwestern Railway is advocated by southwestern railroads in a joint brief. A defense of the proposed traffic innovation was offered by the Cotton Belt in its brief, filed simultaneously.

Urging approval of the rates, the Cotton Belt stated it should be permitted to make the experiment whereby loaded or empty motor trucks, trailers, trucks or trailer bodies or similar containers would be handled on railroad cars between St. Louis and Arkansas destinations and between Shreveport, La., and St. Louis.

The protesting carriers allege that the Cotton Belt's proposal will result in a complete breakdown of the southwestern rate structure, both as to car load and less than car load traffic.

Under the proposal the Cotton Belt would transport a loaded vehicle container to a given destination and the empty vehicle back to point or origin. The average loading of such a vehicle container would be 16,000 pounds and the proposed rate $105 to transport it from St. Louis to Little Rock and return.

DE SOTO APPOINTS CASS IN DETROIT

Detroit, Nov. 29.—The De Soto Motor Corporation announces the appointment of the Cass Motor Sales, Inc., 3646 Woodward Ave., at Brady Street, as a De Soto-Plymouth dealer. The firm is one of the oldest organizations on Detroit's automobile row and has placed thousands of automobiles on the city's streets.

With 48,000 square feet of floor space employed, the showroom and service station are among the finest in Detroit.

R. A. Cott, president of the company, is one of the leaders in the retail automobile business here and secretary of the Detroit Automobile Dealers Association. Mr. Cott has been in the automobile business for eighteen years, sixteen of which were spent in Detroit.

R. M. Fennessy is in charge of sales for Mr. Cott and Blair Fisher is service manager.

RAILROAD VS. TRUCK FIGHT IN NEBRASKA

Lincoln, Neb., Nov. 29.—Thirty-two applications made by various Nebraska railroads for reduction of rates on commodity movements of less than carload lots have been filed within the last month with the State Railway Commission.

These represent the adoption of a new policy of the railroads to make rates that will get back from the trucks a large proportion of the less than carload hauls. In most instances these reductions apply cut of jobbing centers and cover merchandise movements.

WILLYS TO FEATURE NEW LOW PRICED '4' AND '6' FOR 1933

Toledo, O., Nov. 29.—A new line of four-cylinder cars built for economy in operation as well as low initial cost will be a feature of the Willys-Overland offering for 1933, according to an announcement by John N. Willys, chairman of the board. The offering also will include a line of six-cylinder cars.

The new light four is designed to weigh approximately 2,000 pounds, which is 500 to 700 pounds lighter than other small cars on the market, Mr. Willys claims. It will not, however, fall in the bantam class, as wheel base and tread dimensions place it definitely in the full size small car field. According to Mr. Willys, the new model will average 30 miles to a gallon of gasoline, with correspondingly low costs for other operating necessities.

The line will include a two and four passenger coupe, a four-passenger sedan, convertible roadster, pick-up delivery and panel delivery body types.

Production is expected to get under way about December 15 at the plant here, with the Willys-Overland Pacific Company at Los Angeles, Cal., getting started about January 1. The new lines will be ready for distribution at the time of the first public showing, which is scheduled for the New York National Automobile Show, which will open January 7 at Grand Central Palace.

AUTOMOTIVE EXPORTS GAIN 1.8% IN OCTOBER

Washington, Nov. 29.—The gain in automotive exports amounted to 1.8 per cent., the overseas shipments for October being valued at $5,355,793. This was $97,524 more than the September amount and accounted for the first increase since May. Moreover, it was the first time since 1928 that October had shown an improvement over September. The October, 1931, total was $9,178,196.

A strengthened demand for heavy capacity trucks and miscellaneous automotive products was entirely responsible for halting the downward trend in exports. Passenger car shipments declined $583,792, whereas exports of trucks and miscellaneous products advanced 7 and 23 per cent., respectively.

The Union of South Africa was the leading market for passenger cars in October, and Belgium retained the position of chief purchaser of American trucks. Belgium buys an appreciable quantity for re-export, however.

The production of automobiles in Canadian plants rose from 2,342 to 2,923, comparing September with October. Passenger cars accounted

(Contnued on Page 7)

E. D. MARTIN HEADS BATTERY MAKERS ASSN.

New York, Nov. 29.—At the eighth annual meeting of the National Battery Manufacturers Association, held at the Hollenden Hotel, Cleveland, O., the following were elected to serve as officers during the year 1933:

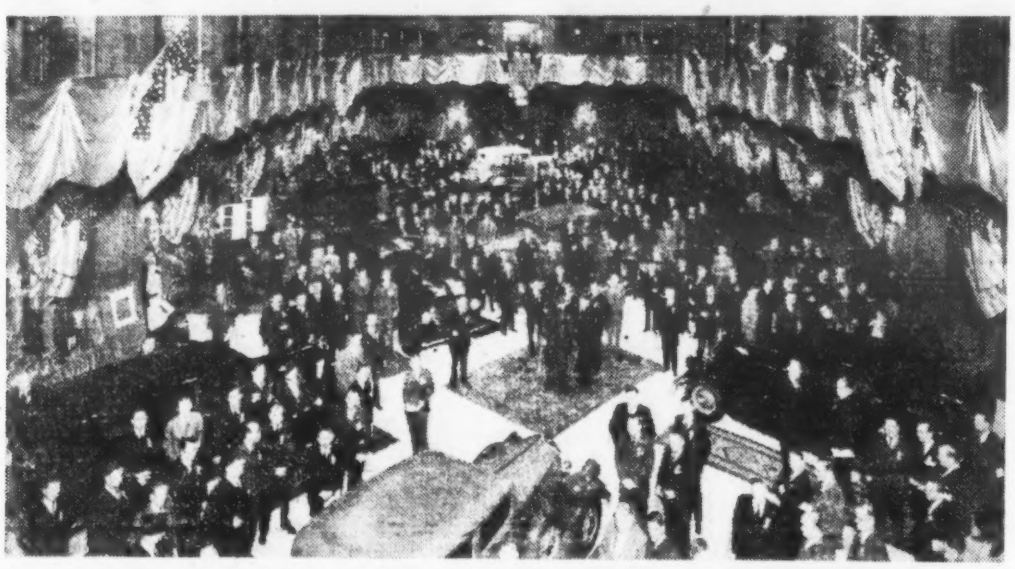
President E. D. Martin, Emark Battery Corporation; first vice-president C. O. Wanvig, Globe-Union Manufacturing Company; second vice-president L. N. Talkes, Cleveland Storage Battery Company; Secretary D. A. Graham, Red-Bar Battery Company and treasurer L. A. Doughty, Carlile & Doughty, Inc. Directors elected were: R. D. Mowry, Universal Battery Company; A. A. MacLean, USL Battery Corporation; C. L. Schutz, Grant Storage Battery Company; C. L. Feldtkeller, Solar Corporation.

A well-balanced program held the interest of 125 battery manufacturers who attended this convention. One of the oustanding accomplishments of this meeting was the appointment of the "Battery Co-ordination Committee," made up of prominent manufacturers in the industry, both members and non-members consisting of the following:

L. B. F. Raycroft, chairman, Electric Storage Battery Company; L. Shields, National Battery Company; C. P. Bowers, Bowers Battery Man-

(Continued on Page 6)

Distributors View New Pierce-Arrows



At a convention of its distributors and dealers in Buffalo a few days ago, the Pierce-Arrow Motor Car Company staged a pre-view of its 1933 line of cars. This photograph was taken as the assembled Pierce-Arrow home office and retail representatives were inspecting the display.

PENNSYLVANIA CITES 167 FOR ACCIDENTS

Harrisburg, Pa., Nov. 29.—The Division of Safety, Department of Revenue of Pennsylvania has cited for hearing 167 so-called "accident prone" drivers since the first of the year, it has announced. The "accident prone" driver is the one who has been involved in three or more accidents during his driving career, according to W. W. Matthews, director of the division.

The bureau has divided the "accident prones" into two classes—those suspected of being incompetent, either through physical or mental infirmities, and those with progressive accident records or who are habitual violators with a record of numerous arrests or accidents.

Of the sixty-six alleged incompetents cited, forty-six had their driving privilege suspended. Four were referred to mental health clinics for examination. Six more dismissed with warnings or reprimand. In two cases no action was taken. Seven are awaiting hearings. One suspension has been lifted.

Sixty-four habitual violators were suspended. One was referred for examination to a mental health clinic, seventeen were dismissed with warnings or reprimand and four had their permits restored.

AUTOMOBILE OUTLOOK IN CANADA BRIGHTER

Toronto, Canada, Nov. 29 (UTPS).—C. E. McTavish, general sales manager of General Motors Products of Canada, Ltd., states that the anticipatio nof the production of the new model cars this winter already has increased motor plant activity and there are now signs of a steadily upward trend in new car sales.

He predicts that automobile trade will be more active next year, and announces that the General Motors models for 1933 will soon be introduced in Canada, beginning with the McLaughlin-Buick early in December.

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FINANCIAL NEWS

F. E. MYERS & BRO.

Cleveland, Nov. 29.—F. E. Myers & Brothers Company, for year ended October 31, 1932, reports a net income of $197,116, after depreciation, Federal taxes, etc., equivalent, after preferred dividend requirements on the 6 per cent. preferred stock, to 53 cents a share on 200,000 no-par shares of common stock. This compares with $643,250, or $2.75 a common share, in preceding fiscal year.

F. E. Myers & Brothers Company has declared a quarterly dividend of 25 cents on the common stock and the regular quarterly dividend of $1.50 on the preferred stock, both payable December 30 to stock of record December 15. In the two previous quarters dividends of 35 cents each were paid on the common stock, prior to which the stock was on a $2 annual basis.

FAILURES

New York, Nov. 29.—Failures occurring during the week ended November 26 totaled 460, compared with 480 in the preceding week and 492 in the corresponding week of 1931, according to Dun's review. A constant downward movement in the number of defaults has been observed and recorded by Dun's during the last five weeks. At this time of the year the tendency usually is in the other direction, it was pointed out.

NATIONAL GRANGE URGES UNIFORM TRUCK LAWS

Richmond, Va., Nov. 29 (UTPS).—Demands for uniform state laws for regulation of motor vehicles and the declaration that the state should be the sole taxing agency for motor vehicles and that no division of the gasoline tax from highway improvement should be tolerated were made in a resolution adopted by the National Grange, in session at Winston-Salem, N. C.

The grange adopted the following resolution, asking uniform motor vehicle laws, and said: "It is well understood that the railroads are the backbone of the farmers' transportation system. However, it must be recognized that the development of motor transportation has brought with it a new type of transportation service which must be taken into account in the consideration of future transportation policies."

$3,500,000 INSURANCE FOR EATON EMPLOYEES

Cleveland, O., Nov. 29.—Over 3,000 employees of Eaton Manufacturing Company and subsidiaries, including Wilcox-Rich Corporation, have subscribed to the Group Insurance Plan arranged for them by the Eaton management.

The Eaton company is sharing an appreciable portion of the premium expense on these policies, enabling its employees to secure this protection at an exceedingly low rate.

TOLEDO EMPLOYMENT FIRM; OUTLOOK BETTER

Toledo, Nov. 29.—Employment in fifty-one major plants here, mainly automotive, declined by only 16 men in the week ended November 26, after large gains registered for seven consecutive weeks in which 2,800 workers had been added since October 1. The fifty-one plants reporting to the Merchants and Manufacturers Association now have 14,802 workers as compared with 14,818 a week ago and 15,575 two weeks ago.

Willys Overland Company this week will start recalling many workers to assist in getting the company's new 1933 models and the new truck for International Harvester Company under production by December 15.

CAMPBELL WILL TRY FOR SPEED RECORD IN '33

London, Nov. 29.—Sir Malcolm Campbell, holder of the world's automobile speed record of 253.968 miles an hour, probably will make an attempt in February at Daytona Beach, Fla., to break his own mark, friends said today. He hopes to raise the mark to 300 miles an hour, a figure he has set as possible speed.

The British sportsman's Bluebird, in which he set the world's record last year at Daytona, had been rebuilt and fitted with a new 2,500-horsepower engine, 1,000 horsepower greater than his old machine. The chassis of Bluebird also has been strengthened and further streamlined to cut down air resistance.

GERMAN AUTOMOBILE SALES AT LOW LEVEL

Berlin, Nov. 29.—Sales of new automobiles in Germany have been extermely low during the last few months. During the third quarter of 1932, most German manufacturers sold 30 to 50 per cent. fewer cars than last year, a period which was unsatisfactory. Total sales for the first nine months during the past three years were as follows:

	1932	1931	1930
Passenger cars	32,441	49,001	69,840
Trucks	5,177	10,805	12,765

It seems hardly likely after such an important drop in sales for the first nine months, that any German automobile company will be able to pay a dividend for 1932.

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SPARKS *from* DETROIT

Friendly Enemies
Farm Markets
Body Reviews
S. A. E. Diners
Easing Off

Chris Sinsabaugh—Detroit Editor

IN a few days—I cannot give you the exact date right now—one of the big-shot manufacturers will spring a brand-new stunt. He will set aside one whole day of a three-day preview and invite certain folk to attend.

Of course, I could give you three chances at guessing who those certain folk will be, but you can't get anywhere near the correct answer. So here it is—he'll invite his competitors, his rivals! Yes, sir, the manufacturers, engineers, factory and sales officials, dealers. Those who design, build and sell other makes of automobiles are to be given an exclusive chance to look, to ask questions, voice criticisms all they want to.

To the commentator, this looks like a swell idea, worthy of imitation. More about this in a day or two.

* * *

HOW'S THE INDUSTRY'S biggest customer, the farmer, feeling now that the election is over? is the question some of the automobile sales managers are asking. The column's private pipe line, J. J. McMahan of the Corn Belt Dailies, answers this by sending me advance proofs which show a changing viewpoint. Farmers, they say, are taking a brighter view of general conditions. "Each little advance seems to be significant, where not long ago it would get only a shrug of the shoulder from a righteously discouraged and disgruntled farmer," is what on Iowa farmer writes.

The live-stock farmer is best situated. He not only is fully employed but actually making a little money. Live stock prices are down, but they have not declined to the same extent as have prices of other things. "America's thousands of hog factories are operating full blast. The industry is solvent. The margin is narrow, but the producer is meeting an emergency with the lowest costs in his history," McMahan reports.

* * *

DON'T IMAGINE THAT the commentator previews only passenger cars. There's a diversity to the job after all. This we discovered when we were invited by N. C. Wolfe of Wolfe Bodies, Inc., of Detroit, to look over the Silver Dome layout of new models of travel and business coaches.

Silver Domes are trailers, but of the de luxe type, and the company is set to interest automobile dealers in handling the line. In other words, they are building up a dealership just as do automobile manufacturers.

Examples of their handiwork are found in jobs built for several big companies, which send their salesmen out into the country with their lines displayed in the coach, ready for demonstrations at points of contact. The trailer hooks onto an automobile and is towed easily. This unit, it is said, can operate in excess of thirty-five miles an hour, with gross loads upward of 24,000 pounds, while it is estimated that in the way of fuel requirements it requires only one extra gallon for each 100 coach miles.

* * *

THE BALLYHOO for the December meeting of the Detroit section of the Society of Automotive Engineers is out. The dinner is set for Monday night at the Book-Cadillac, with the meeting starting at 8 o'clock. The menu is varied, and there are four subjects that should be of interest to the engineers. R. E. S. Geare, chief engineer of the L. H. Gilmer Company, is to talk on "V Fan Belts." That represents the passenger car activity section. Production activity bills W. E. Sanders, forging and metallurgical engineer of Buick, on "Researches on Steel and Forgings." Body activity presents Newton N. Manning, general manager of the Le Baron Company, who will talk about "Readjustment and Its Application to the Automotive Industry," while John Marshall, du Pont's assistant chemical director, will discuss "Paints."

* * *

FORGETTING THE INDUSTRY itself for the moment and becoming just a Detroit motorist, it is pleasing to note that Police Commissioner Watkins has called off the dogs of war. He has told his traffic cops to quit hiding around corners and to come out into the open. He believes the sight of a cop in uniform will prevent violations of traffic rules. In addition, he has told the motorcycle squad to be courteous to offenders and not pull that old gag, "Who do you think you are, Barney Oldfield?" And the cop's efficiency will not be measured by the number of arrests he makes.

Retail Salesmen—This Is Your Page

This department is devoted to the interests of the retail sales division of the industry. Salesmen, this is your department. Automotive Daily News wants you to get something from this department that will help you in your work on the firing line. It wants you to pass on your own experiences, success, failures to help your brother salesmen. Send in your story in the form of a letter, or even a postal card, and let us get it ready for publication. Your achievement or your mistake may help another salesman to make sales or avoid errors that cost you commissions.

Dealers read this page. Give us the benefit of your reactions on these problems that affect the work of your salesmen, the men on the firing line, the men who bring home the bacon or don't.

CALIBER OF SALESMANSHIP CHANGES WITH YEARS

By L. D. BRAY

The economic crisis we are passing through at this time is very rapidly eliminating the few remaining "old-timer" type of salesmen that are still in the ranks, in the opinion of Ernest Burwell, head of Ernest Burwell, Inc., Buick dealer at Spartanburg, S. C.

Discussing present-day sales tactics and also the caliber of salesmen in general, Mr. Burwell, who for a number of years has been recognized as one of the most successful automobile dealers in the Palmetto state, said:

"A large majority of the more important automobile dealerships now demand that their salesmen be highly educated, intelligent individuals of culture and suitable for training as a specialist. The present requirement demands that the automobile salesman be a specialist of the finest quality, well read and thoroughly posted on all matters that have any bearing in his industry.

"There is a great army of employed salesmen who are still talking and thinking of the methods they used to sell automobiles in bygone days, when the real test of sales ability, based on knowledge and experience, was of a very modest nature indeed. Today these men of the 'old-timer' type, many of them quite young in years, cannot even present a first-class argument for their own employment or are in any way able to prove that they can be of any real service to the organization that they propose should employ them.

"The automobile salesman of today must not only be able to market the product of his organization in a satisfactory way and in a sufficient volume to justify his own maintenance in the field, but must also be thinking in terms of the future and the opportunities therein. These opportunities usually consist of new applications, so to speak, of his product in different fields of endeavor than those in which he and his fellow salesmen have been accustomed to consider themselves placed.

"The automobile salesman of today must clearly understand that the definition of the word salesman is a man who sells goods at a profit, and that if this element of profit is absent he no longer is a salesman, but a parasite, and a detriment to his company and a failure in himself. The 'old-timer' and many 'self-styled' salesmen of today have never understood the simplest laws of economics. That is, that only by virtue of the fact that their company prospers through individual effort can they, as individuals, ever hope to prosper in any continuous and substantial way.

"The day of the 'order taker,' in my opinion, has long since passed and the buyer of today is looking for a great deal more. He will pass up this type and his product with him for the automobile salesman who brings him a real message and who is well versed in all matters pertaining not only to his own business but also that of the buyer. Through this medium the able automobile salesman of today places himself in a position to take back to his superiors a vast reservoir of information from which they can determine the needs of those customers and how best to shape the policies of the organization to meet the requirements of all.

"The successful automobile salesman of today must be a very substantial citizen who stands on his own feet and who can justify in his own mind the reason for his own being. To be a success he must devote himself properly to his work. He must keep his own house in order, both economically and otherwise. His mind must be free from personal worries and other entanglements that prevent a free flow of thought in the direction of his efforts."

ATTRACTS CROWDS

New York, N. Y., Nov .29.—The display of 1933 Austins at the showrooms of the Evans Motors, 1717 Broadway, continues to attract crowds, according to A. J. Kulinski, sales manager.

Used Car Selling Prices

Automotive Daily News in this department offers for the benefit of its dealer and salesmen readers a compilation of prices at which used cars have within the past few days been offered for sale by reputable dealers in various cities. These prices will vary on condition and from other causes. They are not presented as being the exact prices at which these models should be sold, but simply as the prices at which they have been offered for sale by dealers in the various cities. Other cities will appear in subsequent issues of this paper.

Detroit, Mich.

Make of Car	1932	1931	1930	1929
Auburn	....	365	....	95
Buick (Lt.)	[2]795	[4]495	345	145- 195
Buick (Med.)	835	....	....	....
Buick (Big)	1095	....	[5]545	....
Cadillac 8	....	1195	[2]785- 895	585
Cadillac 12	....	1950	....	....
Chrysler 6	695	295	295- 395	195- 295
Chrysler 8	....	595	....	....
Chevrolet	370- [3]435	[1]235- 365	[1]180- 235	[1]85- 145
De Soto 6	....	[2]285- 365	195	....
De Soto 8	450- [5]545	....	....	....
Dodge 6	....	365	225	165- 195
Dodge 8	....	[2]395	....	....
Essex	465- 467.50	....	....	....
Ford 4	[1]295- 375	....	....	....
Ford 8	[1]395- [3]465	[1]195- [3]275	[1]125- 195	[2]65- 125
Graham 6	495	265	225	125- 135
Graham 8	....	....	295	....
Hudson	....	395	....	....
Hupmobile 6	465	....	245- 295	165- 295
La Salle	....	[2]775	575- 695	395- 425
Lincoln	1975	....	....	....
Marmon	....	....	175	145
Nash 6	....	....	195	195
Oakland	....	....	....	145
Oldsmobile	....	[2]395- 495	[2]240- 295	[1]165- 195
Packard	....	....	695	295- 375
Pontiac	545	[2]245- 325	[1]145- [1]200	125
Plymouth	[1]295- 395	....	95- 185	75- 109
Reo	....	995	....	....
Studebaker (Com.)	....	....	[5]335	....
Studebaker (Pres.)	....	....	....	195
Willys-Knight	[1]495	....	....	....

Legend: [1]coach; [2]coupe; [3]roadster; [4]convertible; [5]victoria; [6]limousine; [7]brougham; [8]touring or phaeton. When no symbol is used the car is a sedan.

In depression's worst year *He found a way out!*

THIS YEAR, AND LAST, the sledge-hammer blows of the general depression descended on the Tire Dealer. He faced a chaotic condition in the tire industry. Quality was too frequently forgotten. The motoring accident total showed that the tires people were using did not meet the safety needs of modern motoring.

Then Goodrich announced the new Safety Silvertown—the safest tire ever built. The Tire Dealer watched the performance of this new tire, studied its 15% deeper tread, its stronger, thicker carcass, its new road-gripping tread design.

Result: Today, 24.8% more dealers are selling Goodrich Tires than a year ago.

Goodrich sold 59.5% more Silvertowns in the first half of this year than in the same period last year.

Right, Mr. Goodrich Tire Dealer. You found the way out. You picked a winner.

If you, too, would like to find the way out of your present business problems, write or wire us for details of the Goodrich Dealer Program and the story of The Safest Tire Ever Built. The B. F. Goodrich Rubber Company, Established 1870, Akron, Ohio.

THE B. F. GOODRICH RUBBER COMPANY, Akron, Ohio—Makers of 32,000 rubber articles, representing more than a thousand distinct rubber products—Goodrich Tires • Zippers • Rubber Footwear • Drug Sundries • Soles • Heels • Hose • Belting Packing • Molded and Hard Rubber Goods

Goodrich *Safety* Silvertown

THE SAFEST TIRE EVER BUILT

In the great Silvertown Sa... League movement, which ... brought hundreds of thousa... of new prospective customers ... their doors, Goodrich Tire Deal... ers have an exclusive advantage over competitors!

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday, Monday and Holidays, and Tuesday When a Holiday Falls on Monday

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ADVERTISING AND BUSINESS HEADQUARTERS

Harry A. Tarantous, Business Manager. 350 Hudson St., New York, N. Y.
B. B. Crighton, Assistant to Business Manager.
George M. Slocum, Manager, Detroit Bureau, 427 Fisher Building, Detroit, Mich.; phone Trinity 2-3500. Willard R. Cotton Western Manager, 333 North Michigan Ave., Chicago, Ill.; phone Andover 3400. Metz B. Hayes, New England Manager, Little Building, Boston, Mass. Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash.
Address ALL Advertising and business correspondence to 350 Hudson St., New York city.

EDITORIAL DEPARTMENT

350 Hudson St., New York, N. Y. Telephone CA nal 6-1000.
Alexander Johnston, Editor. William C. Callahan, News Editor.
Statistical Department (registrations and specifications), P. J. Robas, statistician. Engineering Department, A. Benson Carleton, technical editor. Merchandising Department, Charles S. Zack, editor. Art Department, John Bauerfeld, director.
Detroit Bureau, Chris Sinsabaugh, editor, 427-8 Fisher Building, Detroit, Mich. Telephone Trinity 2-8300. Contributing editor John C. Wetmore.

The Cost Lag

THERE is a factor in production casts which the average man knows nothing about, but which has an enormous weight in determining profits in any manufacturing industry.

This is the tendency which costs have to lag behind in any upward or downward industrial trend. When the cyclone struck us in 1929, costs had risen to a very high level, having followed sales and profits, as they always do. It took a lot of money to build cars in 1929, though the high costs were absorbed by the huge volume of sales and by the prices paid by the consumers.

Then came the tornado, and sales volume shrank and shrank month after month, year after year. Obviously, the manufacturers had to do something about this. They could not sell the reduced number of cars at the lower prices and make money. They had to cut costs, and they proceeded to do it drastically. But the process of cutting costs lagged after the shrinking market. It took months of careful planning to bring costs down to the level indicated by the lowered production volume. This was a cost lag that meant a loss to the manufacturers.

Now, with three years of depression and shrinking markets behind us, our manufacturers have learned what cutting costs really means. The money needed to produce a car in 1932 is only a fraction of that demanded in 1929. Cars today are being produced on the lowest cost basis in the history of the industry.

Some day—we hope in 1933—there will come a day when buying will once again begin to show signs of real life. When this occurs, the volume of production will go up, manufactureres will begin to get the benefit that is inevitable through the greater output. But costs will not rise instantly with the sales volume. The costs will remain as they are for some months and then very gradually follow the expanding markets.

It is true that during the depression manufacturers generally, and automotive manufacturers in particular, have driven their costs down to exceedingly low levels. It would take only a very moderate expansion of sales volume to enable most of our manufacturers to make a very acceptable profit during the period of lag when costs were still at the levels to which they have been forced by the depression.

In common with most things, we shall have to revise our ideas as to what will constitute prosperity. It is scarcely too much to say that, with present costs holding, the automotive industry can show a fair degree of prosperity on a volume increase of 15 to 20 per cent. in 1933.

There has been much talk lately in the automotive industry of the impending arrival of various small cars, stripped of all luxuries and representing, so to speak, "raw transportation." Rumors have been bandied about that a number of prominent manufacturers were getting ready to offer small cars, stripped of all but the most necessary equipment, with the sole purpose of giving the public a chance to buy motor transportation at the lowest possible first cost.

There is nothing very definite on which to base a statement at the present time; no car has been actually announced to give foundation to the rumors that have been flying about. Plymouth has announced its 1933 line, and this car, based in the lowest price bracket, is certainly not "raw transportation," but a well-equipped vehicle. Certain other units in the lowest priced division are known to follow this tradition of giving much for least money. On the other hand, there is no definite announcement of a "stripped transportation" unit, and we are inclined to believe that none will come.

Evidently the manufacturers believe that, even after three years of depression, the American public still demands something more than bare transportation. As further impending announcements come forth, it will be interesting to see just how far automotive vehicle manufacturers have accepted the idea of offering bare transportation.

In This Corner....

Opinions, suggestions, complaints, criticisms, grievances or what have you. Open to every one to say anything, anyhow, any time. The communications printed in this department represent the ideas and opinions of our readers. They are not necessarily ours. If you have something to say on any phase of automotive activity, wholesale, retail or abusive, let us hear from you and we will tell the world.

Here Are Some Problems; Can You Solve Them?

Chris Sinsabaugh, Detroit Editor, Automotive Daily News: I wonder if you will recall the writer, but it's been a long time ago since I had the pleasure of meeting you, and I was then with the old Republic Truck gang, and my headquarters at Habana. However, I have been in the states for some years now and have been reading with interest your daily effort in the good old A. D. N. I'll bet it's hard to get interesting dope out each day, but, truth to tell, I would certainly miss your chatter, which means that it has gone over big. It's about the only place we old timers get news about all the other old timers, and it's great for this reason if for none other.

But I didn't put myself out to pick and peck at the keyboard just to flatter your work, though it gave me a good opportunity, as I find I have to spend most of my time dictating letters of another nature. My idea is, that as your daily reaches most dealers, both car and truck, why wouldn't it be a good time to feel them out on the following questions:

Why couldn't the dealers get together for their own protection in certain sections and appoint a central appraisal manager for tradeins? Who could act without fear or favor in placing the actual value on the used car or truck, the cost of doing so to be borne by the organization. And a substantial fine to the member who exceeded this appraisal?

Why couldn't time payments be based on both time and mileage? Some purchasers use up more mileage, which is also wear and tear, in a month than others do all year.

Why, on new car or truck deliveries, couldn't some form of ticket be given to the purchaser at the time of sale, which would definitely cover the amount of free adjustment service he or she would be entitled to free of charge, except, of course, in major faults?

Why couldn't we get legislation to authorize the I. C. C. to issue license plates for all trucks operating interstate on fixed runs, doing away with this multiplication of plates and charges for them, which is a very real burden on the operator? Some deal could be worked out on a mileage basis with each state so that they could get their pound of flesh.

We all must have some thought on the subject; no doubt you have one which knocks mine all hollow. But we here in New England believe these to be subjects of major importance. Of course there are legions of others, but with the proper amount of faith in better times to come we'll no doubt surmount most of them by then. **F. U. WELLS,**
Stewart Motor Truck Company, Brighton, Mass.

Editor's Note.—While we feel that if Chris could do all the things Mr. Wells has suggested in this letter he should be the unopposed candidate for a One-Man War Debt Settling Commission, we nevertheless believe that Mr. Wells has raised some questions worth a great deal of study by the industry as a whole. We therefore not only ask but urge our readers to express their views on the questions Mr. Wells has presented. You never can tell how good your opinions may be until you match them with the other fellow's.

COMING EVENTS

NOVEMBER

18-Dec. 4.—**Paris, France.** Aeronautical Show.

DECEMBER

1- 2—**Washington, D. C.** Highway Research Board, meeting.
2- 3—**Detroit.** National Standard Parts Association Convention.
5—**New Orleans, La.** Association of Asphalt Paving Technicologists.
5- 9—**New York.** Annual Meeting A. S. M. E.
5-10—**New York.** Power and Mechanical Engineering Exposition.
5-10—**Detroit.** Motor and Equipment Manufacturers Association, convention, Hotel Statler.
5-10—**Detroit.** Third Annual Joint Trade Show, National Standard Parts Association and Motor and Equipment Manufacturers' Association, Convention Hall.
6- 8—**New Orleans, La.** National Association of Finance Companies annual convention.
12-14—**Springfield, Ill.** Automotive Trade Association annual convention, St. Nicholas Hotel.

JANUARY

7-14—**New York City.** National Automobile Show, Grand Central Palace.
7-14—**San Francisco, Cal.** Motor Car Dealers' Association of San Francisco show.
7-15—**Los Angeles, Cal.** Los Angeles Motor Car Dealers' Association, twentieth annual show.
8-14—**St. Louis.** Automobile Dealers' Association Show, Midwest Terminal Building.
9—**New York, N. Y.** Society of Automotive Engineers' Show, meeting.
12—**New York.** Annual S. A. E. dinner Hotel Pennsylvania.
12-13—**Springfield, Ill.** Illinois Automotive Trade Association, meeting.
11-21—**Newark, N. J.** Newark Automobile Dealers' Association, show.
14-21—**Buffalo, N. Y.** Annual show.
15-21—**Cincinnati, O.** Cincinnati Automobile Dealers' Association, show.
16-21—**Brooklyn, N. Y.** Annual Show.
16-21—**Philadelphia.** Annual show.
16-25—**Detroit.** Highway and Building Congress.
21-28—**Boston, Mass.** Boston Automobile Dealers' Association. Boston Commercial Motor Vehicle Association show.
21-28—**Detroit, Mich.** Detroit Automobile Dealers' Association, show.
22-26—**Detroit.** Annual S. A. E. meeting Book-Cadillac Hotel.
27-Feb. 15—**Cairo, Egypt.** International Salon.
28-Feb. 4—**Chicago.** National Automobile Show, Coliseum.
28-Feb. 5—**Washington, D. C.** Washington Automotive Trades Association show.

FEBRUARY

4-11—**Indianapolis.** Twenty-second annual show, Indiana State Fair Ground.
9-11—**Springfield, Ill.** Springfield Automobile Dealers' Association, show.
11-18—**Kansas City, Mo.** Kansas City Motor Car Dealers' Show.
27-Mar. 11—**New York City.** Chemical Exposition, Grand Central Palace.
20-21—**Cleveland, O.** National Petroleum Association.

TRUCK SAFETY CONTEST IN MASSACHUSETTS SHOWS ACCIDENT INCREASE

Boston, Mass., Nov. 29.—For the second successive month, accidents of commercial vehicles competing in the fourth statewide commercial vehicle safety contest showed a marked increase over the previous month, the governor's committee on Street and Highway Safety reported today in making public the record for the month of October.

There were 617 accidents reported during the month, and although the number of vehicles was greater than the previous month, as was the total hours of operation, the increase in accidents was so great that the accident rate per 100,000 hours of operation was increased to 20.00 as compared with 16.00 in the previous month and the all-time low of 14.00 established in July.

Since this competition started in January of this year the accident record of the month of October is the worst with the exception of February.

There were a few encouraging signs in the report, however. Ninety-five per cent. of the 12,560 vehicles which turned in reports during the month went without an accident, leaving a comparatively small part of the field responsible for the 617 accidents which did occur, while 59 per cent. of the 348 fleets, as a whole, also had accident-free records.

THE bill for dirt is the biggest bill automotive owners pay today. They pay for it in decreased performance, gasoline mileage, contaminated and short-lived oil, worn cylinders, hard carbon, burned bearings and all the other ills that follow the use of dirt and dust laden air. Your engine takes in 8400 gallons of air for every gallon of gasoline... just think what it means when that air is dirty. The one sure, complete way to prevent it is to use an Air-Maze... and you'll save a cent or more per mile when you do it! Write for the cost facts today.

AIR-MAZE CORPORATION, *314 Caxton Bldg., Cleveland, O.*

DEALERS TRUCK OWNERS

It pays to sell Air-Maze, both in immediate profits and the friendship of your customers. This subject is becoming more vital every day—let us give you all the facts and show you profits too good to be overlooked.

The new Oil Bath Air-Maze is proving the most important cost-cutting device now available for truck and bus operators. Let us give you the definite figures and show you what Air-Maze will save on your equipment.

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Production--Engineering--Factory

KEEPING GASOLINE FRESH

Discovery of a means of keeping gasolines from "going stale" in storage is announced by Gustav Egloff, J. C. Morrell, C. D. Lowry, Jr., and C. G. Dryer of the Universal Oil Products Company, Chicago, in "Industrial and Engineering Chemistry," journal of the American Chemical Society. Chemicals can be added in small quantities to the gasoline to keep it "fresh," avoiding losses to refiners and motorists.

Gasoline deteriorates rapidly when exposed to the air, becoming dark colored, high in gum content, and lower in knock rating, the report points out, and the problem of preventing losses resulting from necessary storage is one of long standing in the oil industry.

The discovery of chemicals which enable gasolines to be kept in tanks for six months or even longer with only a slight loss of fuel quality is expected to simplify the processes of oil refining and make it possible for the manufacturer to obtain good fuels from oils which cannot now be utilized. "Fresh" gasoline will also lower operating costs for the motorist by decreasing gum deposits in intake valves and carburetors, it is stated.

"In commercial practice gasolines must often be kept in refineries or bulk stations for six months or longer," says the report. "Many motor cars, moreover, have long periods of disuse. It is obvious that tendency to change during such storage is harmful.

"Loss of antiknock value seriously lowers the market value of a gasoline. Gum in gasoline is likely to deposit in the induction system of a motor, interefere with the operation of the carburetor and intake valves, and even prevent car operation. The increased demand in recent years for antiknock motor fuel has made the problem of gasoline stability, as to color, gum and knock rating, of great importance.

"Among the many factors which influence the rate of deterioration of stored gasoline the most important is oxygen. Gasoline out of contact with air changes but slowly. In commercial gasoline storage contact with oxygen is guarded against in many cases, but air is usually not entirely absent, even when special precautions are taken. However, gasoline can be effectively protected against oxidation by the addition of anti-oxidants or inhibitors."

Experiments showed that compounds such as alpha napthol were effective in preventing oxidation, according to the report, and that only small quantities were necessary. The amount needed depends on the type of gasoline to be treated.

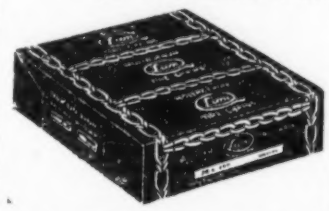
"Comparative tests on inhibitors were made in a uniform concentration of one one-hundredth of 1 per cent. in Pennsylvania cracked gasoline treated with fuller's earth," the report explains. "When a compound in this concentration produced a slight change, too small for inhibitive action to be assigned to it with certainty, the test was repeated in five one-hundredths of 1 per cent. concentration. The compounds tested were in most cases of the highest quality, and in a few cases recrystallized or redistilled technical products were used. Generally the substances did not affect the color of the gasoline."

ARMATURES FOR V-8 FORD

The Fredericks Armature Corporation, Lock Haven, Pa., announces it is making deliveries on both starter and generator armatures for the V-8 Ford. These service armatures are guaranteed for material and workmanship.

The 1933 edition of Fredericks' armature catalogue is also ready for delivery. Requests should be directed to the Fredericks Armature Corporation, Lock Haven, Pa.

Simplified Grouping Of Tire Chain Sizes



A simplified grouping of tire chain sizes is being inaugurated by the Lion Chain Company, Chicago.

Under this new plan for the 1932-33 winter season a total of ten groups of chains take care of a range from 30 x 3½ and 29 x 4.40 to 34 x 7.00 and 7.50-17—a range which embodies forty-one tire sizes.

Under this group arrangement it is claimed it only takes two sizes of Lion chains to fit 50 per cent. of all cars, and only three sizes to cover 80 per cent. It is not necessary to carry a lot of different numbers, representing a big investment. Only a few numbers are needed to service most cars. Stock investment is reduced and stock turn is increased.

All grades of chains manufactured by the Lion Chain Company are packed in cartons, with tire sizes clearly indicated on the labels. Details are set forth in a new catalog covering Lion Molybdenum, Regular, Extra Heavy and "Cub" brand tire chains. A copy will be supplied on request by the manufacturer.

This concern also makes a complete line of cross chains, repair links, emergency units, chain adjusters, chain pliers, towing chains and other chain products.

USES OF STAINLESS STEELS

The Electro Metallurgical Company in New York has just published a twenty-page book discussing various applications of stainless steel.

Taking up in detail the group of chromium and chromium-nickel steels generally referred to as "stainless steels" the book shows that these contained from 12 to 20 per cent. chromium, with or without other alloying elements. Of these, the book says, the 18 per cent. chromium and 8 per cent. nickel steel is probably the most widely used.

Stainless steels are particularly well adapted for use in resisting atmospheric corrosion, attack from oxidizing agents and scaling at elevated temperatures. Because of their good physical properties and broad range corrosion resistance, they are continually finding new uses in place of ordinary steel and cast iron. These alloy steels are employed in practically every branch of industry; and in certain fields their excellent characteristics have brought them into special prominence. Chief among these are the food and associated industries, petroleum, automotive, chemical, high temperature and pressure, shipbuilding, architecture, aircraft, railroad, paper and hospital fields. Recent surveys indicate that these industries are the major consumers of stainless steels.

In the food preparation and distribution fields stainless steels are becoming increasingly popular, because of their resistance to rust and corrosion by food products and because they do not affect the taste or odor of the food. Everything from tanks for trucks and freight cars to thermometer parts is being fabricated from this group of alloy steels.

The extremely corrosive agents encountered in the petroleum industry attack metals so severely that the life of ordinary steels is frequently very short. The length of service of plain carbon steel tubing is reckoned in months and sometimes in hours. Various types of alloy ih ours. Various types of alloy steels are being used, but at present stainless steels are giving the best results when operating conditions are severe.

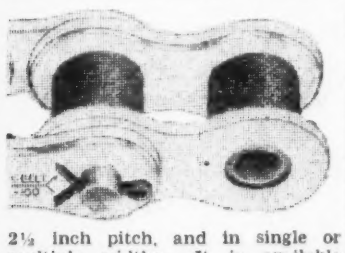
Stainless steels are used in the automotive industry principally for trim that will not rust or tarnish and can be cleaned readily. Pump shafts and similar parts are frequently made of these alloy steels

(Continued on Page 11)

SILVERLINK ROLLER CHAIN ANNOUNCED BY LINK-BELT COMPANY

Today comes an announcement by Link-Belt Company, Indianapolis, Ind., of a roller chain to be known by the trade-name Link-Belt Silverlink. Although the chain is not made up with silver links, its side bars are especially treated to assist in resisting corrosion, and this treatment gives them the appearance of silver.

The Silverlink roller chain is made in all sizes from ⅜ inch to



2½ inch pitch, and in single or multiple widths. It is available with wheels, for any horsepower, also with conveying attachment links in wide variety; and complete drives are carried in stock by distributors in sizes up to 225 h. p., in speed ratios of 1 to 1 up to 8 to 1.

The construction features claimed for the Silverlink chain are enumerated as follows:

1. Sidebars of alloy rolled steel heat-treated for strength and toughness, and especially treated to resist corrosion, thereby prolonging the chain's life.
2. Nickel steel case-hardened pins, detachable type with cotter, or furnished riveted.
3. Solid steel case-hardened bushings.
4. Alloy steel heat-treated rollers. The Link-Belt curled roller is made from strip steel having a strong fibrous structure, with the fiber running around instead of across the roller, so as to give the greatest strength and resilience to the roller (where the greatest wear takes place), and offer the maximum resistance to shock.
5. Uniformity and close clearances throughout, assuring accuracy of pitch and smooth chain operation.

BENDIX HOLDS POWER BRAKE CLINIC

The Bendix Stromberg Carburetor Company last week held a very successful Bendix brake and B-K power brake clinic at its Chicago branch. There were branch managers of the various automobile companies in attendance, together with service managers and other key men, a total of some 450. Large fleet owning companies were represented by their supervisors, shop foremen and important mechanics.

J. A. Doyle, branch manager of the Bendix Stromberg organization in Chicago, opened the meeting, introducing M. M. Cunningham, assistant general service manager of the Bendix Brake Company at South Bend, Ind., who made a very interesting talk. A moving picture film was shown, giving the process of a shoe going through the Bendix reconditioning process.

F. B. Willis of the B-K Corporation made a brief talk, after which W. Drumpelmann, district manager, presented a paper with lantern slides accompanying it, showing the complete theory and operation of the B-K vacuum power brake.

NEW COILS ANNOUNCED

Standard Motor Products, Inc., Long Island City, N. Y., announces two new ignition coils.

A lock switch coil, No. UC-15, is an innovation. It replaces eleven numbers, fitting all Delco-Remy-equipped cars up to 1932. This is made possible by a detachable and adjustable bracket and by means of an exclusive adapter inside the coil. Patent is pending on the adapter. Two other lock switch type coils complete the line, one for Auto-Lite-equipped cars and one for 1932 models of Delco-Remy. These three coils replace twenty-one numbers.

In addition, Standard will exhibit at the Detroit Joint Trade Show a new supercoil called the Blue Comet. This coil has special heavy-duty construction.

Stewart-Warner Brake On New Pierce-Arrows

Stewart-Warner announces that its mechanical power brake has been adopted as standard equipment by the Pierce-Arrow Motor Car Company for its 1933 models.

Our readers will remember that this power brake system was described at length and fully illustrated in the November 20, 1931, issue of Automotive Daily News. The action of the brake is ingenious; in accurate multiplied response to variations of pedal pressure, the power unit applies the force of car momentum to the rigid, two-shoe, non-energized wheel brakes. A self-alignment principle distributes the force uniformly and control is always with the driver.

DURAVALVE REPORTS INCREASED DEMAND

Duravalve, Inc., Maplewood, N. J., reports increased demand for Duravalves, made of an alloy which the maker claims is highly resistant to oxidation and which contains no steel and practically no carbon. The structure of this alloy, which is claimed to have more than double the tensile strength and yield point of steel is said to give it the ability to withstand hard and constant wear while protecting the seat in the motor block.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Remember These Dates

NEW YORK SHOW ISSUES
January 7-9-10-11-12-13

Six Issues at Each Show

Total distribution for each show week.... 165,000

	ALL TRADE	Total for week
3,000	Daily at hotels, show booths, dealer meetings, conventions, etc.	18,000
4,000	Daily to truck fleet owners. Machol list rotated during the week	24,000
5,000	Additional vehicle dealers not among net paid subscribers	30,000
4,000	Selected service stations	24,000
500	Jobbers of accessories, parts, shop equipment.	3,000
1,000	Engineers, production men, etc., not regular subscribers	6,000
10,000	Regular daily distribution, including net paid A. B. C.	60,000
	Total for each show week	165,000
	Average daily distribution	27,500

CHICAGO SHOW ISSUES
January 28-30-31—February 1-2-3

WHEN your advertising appears in the show issues of Automotive Daily News it will be carried to the trade in the quickest time and, because of the visibility of all advertising copy, your ads will be seen. Apart from the number of copies to be distrbuted and the fact that the rates are no higher, there are other reasons why you should use these show issues. Here are some of them: High reader interest. Visibility of all advertising copy. Any frequency desired. Multiple readership (average over six readers per copy). Large size page. Economy. Less than page space can be seen, hence more insertions for same expenditure.

Automotive Daily News

Personally Delivered Copies Free

If you want Automotive Daily News Show Issues delivered to you each day while you are in New York, register now by mailing the coupon below. No charge.

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Automotive Daily News,
350 Hudson Street,
New York City.

While I am in New York please deliver a copy of each New York Show Issue to me at

Name and title.....

Company .....

Permanent business address.....

Fleet Owners' Responsibility In Keeping Their Trucks in Safe Operating Condition Stressed

A discussion of driver training would not be complete without reference to the fleet owners' associated responsibility of keeping trucks in safe operating condition. It would be inconsistent and unjust to the drivers for the management to attempt to operate a driver-control system, involving penalties for accidents, if the drivers were required or even permitted to take out trucks that are not systematically inspected and maintained so as to be free from discoverable dangerous defects.

Important as driver supervision is, lack of it would be more excusable than neglect of equipment supervision, according to H. R. Cobleigh Motor Truck Division, National Automobile Chamber of Commerce.

The first question that has to be decided is, "Shall we do our town work or send it out?" Usually the answer is "Both" and the question narrows down to what specific operations should be done within the plant and what ones done in an outside shop. Economy and convenience will determine the decision in regard to each.

The factors to be considered are the number and kind of trucks; the territory and particularly the distance covered from the garage; the availability of outside service as good as or better than can be set up within, and the relative cost and satisfaction resulting from the alternative policies.

No formula can be laid down to work out the answer for any given set of conditions. The analysis of an expert, called in if necessary, would be the best guide. A few principles may be given, however, that will help the fleet owner to judge how far he is justified in going in providing his own facilities. Finally, by experimentation, he will work out his own clear-cut policy.

For the smallest fleet there should be provisions for the daily or, at least, reasonably frequent inspection of brakes, steering gear tires, lights, horns and other signaling devices. Enough of the time of a man or men will be the principal expense. The required investment in tools and testing equipment is so small that it will be warranted in every instance. For the more refined tests, such as wheel alignment, brake adjustment, etc., outside service stations may be relied upon, unless the fleet is large enough to call for enough use of this equipment for its purchase to be an economy.

When inspection reveals the need of adjustment or repairs, unless they are such as can be made by a reasonably skilled mechanic with hand tools, the work should be done by a specialist, tooled for that work. This applies to such operations as relining brakes, truing brake drums, straightening axles and any others that only a well-equipped expert should attempt. Work of this character is usually sent to outside shops by all but the larger fleet operators.

Self-service in lubrication and the tightening of loose nuts and bolts, requiring no heavy investment in equipment, will also be in order for the smallest fleet. There may well be added facilities for numerous operations that may be classified as maintenance rather than repairs, such as adjusting carburetors; fuel feed, ignition and electrical systems; engine valves, and bearings of all kinds. Carbon removal and engine tuning may be left to the fleet's own mechanic, but complete overhauls and major repairs are likely to cost less and be better done in the shops of outside specialists. If the fleet is all of one make and that maker has a good service station near at hand, that will probably be found to be the place to get the best work at the lowest cost. Many fleet owners have contract arrangements and send in their trucks periodically, in rotation, for the attention of those who are thoroughly familiar with all of the mechanism.

For moderate size fleets, of roughly from twenty to forty units, much more may be done in the company's own garage unless exceptionally good arrangements can be made with outside shops. It is always a matter of

(Continued on Page 12)

E. D. MARTIN HEADS BATTERY MAKERS ASSN.

(Continued from Page 1)

ufacturing Company; C. O. Wanvig, Globe-Union Manufacturing Company; R. D. Mowry, Universal Battery Company; D. A. Graham, Red-Bar Battery Company, and A. A. MacLean, USL Battery Corporation.

Among the interesting discussions was an address on "Reconstruction and the Automotive Industry" by John W. Love, writer, in which he predicted that "unless our 'American overhead' expense is materially reduced the country will face inevitable inflation." This was followed by an address illustrated with charts on the "Effect of Economic Conditions on Battery Life," given by S. W. Rolph, vice-president and general manager of the Willard Storage Battery Company, Cleveland, O.

The committee reports followed: Consignment Committee, Rebuilt Battery Committee, Guarantee Committee, Technical Committee, Traffic Committee, Cost Committee and the Statistical Committee, particularly, giving very constructive reports of progress.

The following four new members were added to the roster of the N. B. M. A. at this meeting: Active Members: Coliseum Battery & Equipment Company, Chicago, Ill.; Marko Jr., Corporation, Brooklyn, N. Y. Associate Members: Aljon Specialty Company, Chicago, Ill.; The Great Lakes Rubber Company, Cleveland, O.

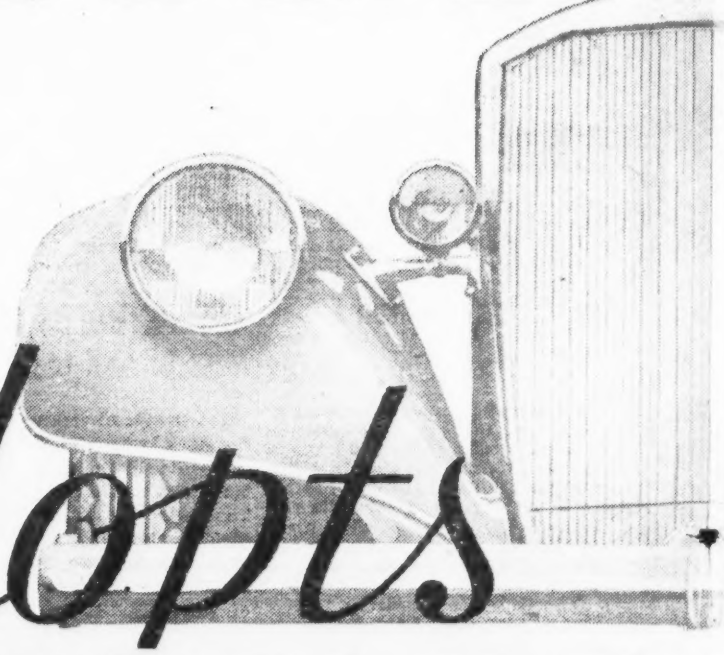
The spring meeting of the N. B. M. A. will be held some time in May, 1933, in Louisville, Ky.

TO DISTRIBUTE MAPS TO CHICAGO FAIR

Chicago, Nov. 29.—Ten million official Century of Progress highway maps and tourist guides will be distributed to motorists of the United States. Announcement of the signing of a contract for the printing and distribution of these maps was made by officials of Chicago's 1933 World's Fair. Joining with the exposition in the contract are the Chicago Motor Club and the Goes Lithographing Company.

The maps will be distributed by oil companies which maintain service stations throughout the United States and by motor clubs in many states.

PIERCE-



Adopts

STEWART-

POWER

Twelve months of the most rigorous road and laboratory tests convinced Pierce-Arrow engineers that here were the brakes to give Pierce-Arrow owners the utmost in safety, dependability and driving ease.

Stewart-Warner is justly proud of this tribute to its own engineering staff.

For today—as for more than three decades—Pierce-Arrow engineering is recognized for its exacting standards and progressive conservatism. Unproved fads—even though they give promise of enjoying a tremendous sales appeal—cannot successfully run the gauntlet of Pierce-Arrow engineers.

STEWART-WARNER MECHANICAL POWER

AUTOMOTIVE EXPORTS GAIN 1.8% IN OCTOBER

(Continued from Page 1)

for the rise, mounting from 1,741 to 2,361, while trucks fell from 601 to 562.

The output in Canada for the first 10 months of the year was 56,473, against 78,942 in the corresponding months of last year. The Canadian figures are supplied to the Census Bureau by the Dominion Bureau of Statistics.

Statistics for American activity are based on factory sales by manufacturers, 144 of whom supply data to the Census Bureau. Passenger car figures include only those designed as pleasure vehicles, while the taxicabs reported are those built only for that purpose. Truck figures include ambulances, funeral cars, street sweepers, buses and fire apparatus.

WEST VIRGINIA RULES AUDITOR CANNOT SET CAR INSURANCE RATES

Charleston, W. Va., Nov. 29.—The rates charged by insurance companies for automobile public liability and property damage insurance in West Virginia may not be regulated by the state auditor, the state Supreme Court has held in affirming the decision of the Kanawha County Circuit Court in the case of the Aetna Casualty and Surety Company et al. vs. Lawson, state auditor, etc.

The lower court had granted an injunction against the auditor restraining him from revoking the licenses of thirty-seven casualty companies which had refused to submit to his proposed regulation of rates and which had put into effect a rate increase despite the auditor's warning that he would revoke their licenses if they did so.

In affirming the lower court's ruling, the court held that sections of the Code of 1931 "providing that indemnity companies 'shall be subject to the same examination and supervision of the insurance commissioner (the state auditor) as is now provided for insurance companies incorporated or doing business in this state' does not purport to subject indemnity companies to the provision . . . of the code dealing with rate-making bureaus and the auditor's right to regulate rates."

Dealer Activities

COUNCIL BLUFFS, IA.

In this day of retrenched ads, sliced budgets, the opening half page ad campaign gun of the Bower Motor Company, Council Bluffs, to clear its used automobile decks, is of more than passing note. The ad brought out what firm members stated was the most unheard of used automobile sale the city ever saw.

* * *

ATLANTA, GA.

Organization of Central Motors, Atlanta's newest Ford and Lincoln dealership, has been completed. Proprietors of the new concern are Floyd W. Northcutt, who will be general sales manager, and Ernest S. Armistead, who will be general service manager. Harry J. Lee will be retail sales manager, G. C. McClendon, used car manager; R. F. Brady, service manager, and J. N. Hudson, Lincoln-Ford service manager. The firm will occupy the old quarters of the Grant Motor Company.

* * *

Harry Burns, for fifteen years salesman for local automobile firms, has joined the John Smith Chevrolet Company in the capacity of new car salesman. He will make his headquarters at the company's showrooms at 530 West Peachtree St.

* * *

Announcement has been made by Clyde Langford, head of the Clyde Langford Motor Company, Atlanta associate dealer for Chrysler and Plymouth cars, of the removal of his organization from its present quarters at 231 South Pryor St. to the quarters formerly occupied by the used car department of his company at the corner of Edgewood and Piedmont avenues.

* * *

Manning J. Siegel, well-known Atlanta automobile salesman, has joined the staff of the East Point Chevrolet Company, entering the six-cylinder field for the first time in his experience.

* * *

WHITE PLAINS, N. Y.

De Soto Motor Corporation today announced the appointment of Motor Associates, 76 S. Lexington Ave., White Plains, N. Y., as a De Soto and Plymouth direct dealer for that territory.

N. J. TRUCK OWNERS PLAN FOR BIG FIGHT AGAINST BAD BILLS

(Continued from Page 1)

courts, it is felt certain, because of the many ambiguities written in the measure.

Forces opposed to motor trucks, it was further said, are preparing several measures to be presented to the forthcoming session of the Legislature. All of them are detrimental to the users of motor vehicles. Several of these proposed bills were outlined.

One of them contemplates an increase in the license registration fees for both public and private users of from 200 to 500 per cent.

Another bill seeks the regulation of public and contract carriers as to rates and routes.

A third would endeavor to restrict the size and the weight of trucks.

The fifth would restrict trucks that are engaged in transportation for hire from operating over highways that parallel railroads.

Clarence Finkel, Clifton truck fleet operator, said:

"We held an important conference of the motor industry at Washington recently and discussed the question of regulating the trucking industry.

"The matter of regulation developed from the question as to whether or not, if regulation is to be adopted, a commission should be created independent of the interstate commerce commissioner to handle this phase of interstate transportation and commerce. It was the consensus of opinion the present interstate commerce commission has too much work to do at the present time."

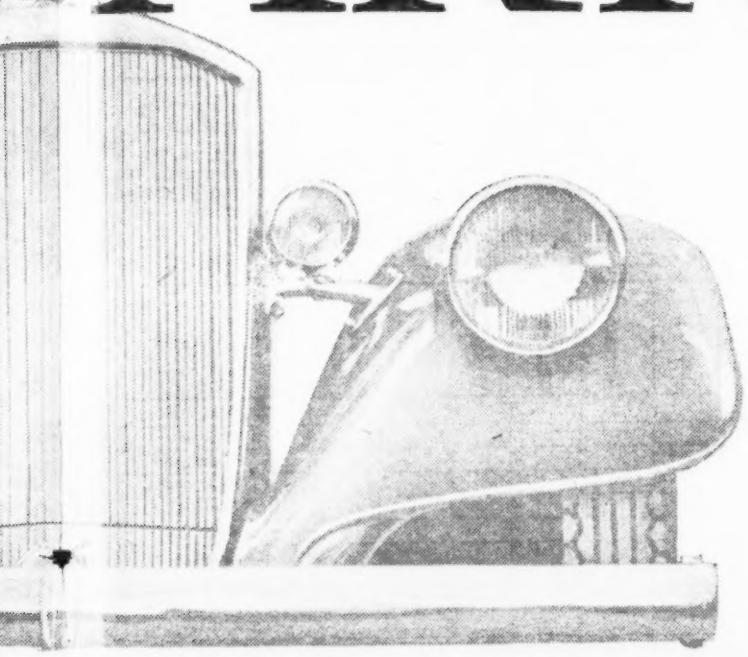
A. V. Alexander expressed the belief congress would pass some form of regulatory legislation at the next session.

H. R. Duffy of the Arrow Carrier Corporation, who also attended the Washington conference, speaking as a member of the advistory committee appointed by the conference, said that constant supervision should be maintained over New Jersey, New York and Pennsylvania legislation.

I. A. Hungerford also expressed the thought that constant watch should be kept on the legislation in New Jersey and nearby states.

The meeting was called by the truck owners' committee of the chamber, consisting of E. M. Rodrock, Peter V. Hayden, A. V. Alexander, Clarence Finkel and R. De Vere Hope.

ARROW



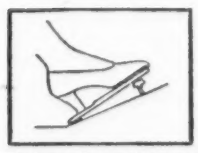
T-WARNER BRAKES

Before any accessory or any equipment is adopted by Pierce-Arrow, it must be proved—it must offer the ultimate to Pierce-Arrow owners.

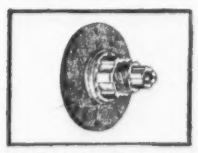
The decision of Pierce-Arrow, therefore, is significant recognition and confirmation of the fact that Stewart-Warner Mechanical Power Brakes offer the ultimate in brake protection to meet today's driving needs.

Investigate why this is so. Our engineers are at your command to demonstrate the fundamental superiority of this brake system. Stewart-Warner Corporation, Brake Division, Chicago, U.S.A., or 6050 Cass Ave., Detroit.

How Stewart-Warner Mechanical Power Brakes Work



The human foot on the Stewart-Warner Power Brake pedal—no higher than a foot accelerator—controls



this Mechanical Foot which harnesses the giant force of car momentum to apply

these non-"grabbing" Stewart-Warner rigid two-shoe Wheel Brakes.

ER BRAKES WILL SELL MORE CARS IN 1933

ONE SO-CALLED 'ROAD FAILURE' EVERY 11,931 BUS MILES NEW PUBLIC SERVICE RECORD

Establishing a new maintenance record of only one so-called "road failure" for every 11,931 bus miles, Public Service Co-ordinated Transport of New Jersey operated its fleet of upward of 2,000 buses during September with fewer interruptions to service than in any previous month. A "road failure" is considered by Co-ordinated Transport any equipment fault which makes it necessary to pull a bus in off the road.

There has been a steady reduction from month to month this year in the number of bus "road failures." Rigid inspection and efficient maintenance have made it possible to operate Public Service buses an increasingly greater distance without service interruption.

Under Public Service's so-called day-to-day maintenance plan its buses are given what amounts to a continuous inspection and upkeep. Garages are equipped to take care of all but major repair work. At the end of the day's run each driver is required to turn in a "driver's bus condition report," on which he indicates any adjustments or repairs which he may have discovered to be necessary. These reports are promptly investigated and attended to.

At present, every Public Service bus engine is given a thorough inspection after 1,500 miles of operation. All parts are cleaned, carburetor and ignition system checked and repaired, generator and starter cleaned and bearings inspected.

Garage inspection crews consist of men specialized in various kinds of work. A carpenter is also assigned to each crew. Should it become necessary to make other than routine repairs, the bus is assigned to garage mechanics, who do the necessary work.

A major activity of the Public Service shops is the reconditioning of buses. At the present time the shops are completely equipped for the overhauling of all chassis units as well as for the manufacture and repair of fenders, hoods and radiators.

Perhaps nowhere else in the system is the principle of co-ordination of car and bus better exemplified than at the Newark shops. The same armature winders who during years of experience have become experts in rewinding and repairing car motor armatures now work on gas-electric bus generators and motors as well. Gas-electric controllers and resistances have no secrets from men who have spent years repairing similar equipment for cars. The same idea of co-ordination extends to other departments, cars and buses standing side by side in the carpenter and paint shops.

The overhauling and painting of bus bodies is carried out in much the same manner as that of cars. The bodies are completely overhauled and all necessary repairs made to fenders, hoods, radiators, wiring circuits, seats, sash and destination signs. The buses are then driven into the paint shop, and, similar to the procedure with cars, the lines of buses are moved down each day until the finished buses, ready for the road, roll out the south doors.

Another function of the Newark shops is that of the overhauling and general repairs to all units of the cars and buses. Among the many types of units reconditioned at the shops for installation by the operating carhouses and garages, are car

(Continued on Page 11)

DISTRIBUTORS AND DEALERS WANTED
For nationally advertised "Silver Dome" Coaches—3 Business and 4 Touring models —$635 to $1265 f.o.b. A modern necessity. Exceptional possibilities for substantial organization or individuals, capable of stocking representative models. Full factory cooperation, with developed sales and merchandising program. Get full details about this valuable franchise for new or added income.
Designers, Builders **Wolfe Bodies, Inc.** Detroit, Michigan.

CLEARING HOUSE FOR DATA ON GASOLINE SHIPMENTS

New York, Nov. 29.—Enactment of legislation creating a clearing house for information pertaining to shipments of gasoline, which would aid the states in fighting gas racketeers, may be expected during the forthcoming session of Congress. This statement was made by William J. Gottlieb, vice-president of the Automobile Club of New York, who declared that such a measure, introduced by Senator David A. Reed of Pennsylvania, is now pending.

"The purpose of the bill," he continued, "is to authorize the United States Bureau of Mines to collect and exchange data with reference to shipments of gasoline. This information would be made available to the states and would be a forward step in the campaign to eliminate tax evaders, who now reap millions of dollars a year at the expense of the states."

INSURANCE VOIDED BY LACK OF NOTICE

New Orleans, La., Nov. 29.—Failure of the assured to forward to the insurance company a copy of the summons and complaint served upon him precludes recovery by an injured party from the insurer under an automobile public liability policy, the United States Circuit Court of Appeals for the Fifth Circuit held recently in the case of Royal Indemnity Company vs. Watson.

It is the overwhelming weight of authority, the court said, "that an assured who has breached this important condition cannot recover unless there has been a waiver, and that the rights of a third person can rise no higher than, but are dependent upon, the rights of the assured." The court said that the evidence in the case "falls far short of proving a waiver."

ARNOLD HEADS P. A. BROOKLYN BRANCH

Brooklyn, N. Y., Nov. 29.—The Pierce-Arrow Motor Car Company announces the appointment of George Kay Arnold as Brooklyn branch manager to succeed F. C. Grismer, who goes to the factory at Buffalo.

Mr. Arnold is well known in the automobile industry. He began with the Packard Motor Car Company as Brooklyn branch manager, later became representative for the Rolls-Royce in the United States, handling this car until he went to San Francisco to represent the Crain Simplex car.

At the close of the war he again joined Rolls-Royce, this time with headquarters in Montreal, Canada. In 1924 he went with Pierce-Arrow as disrict manager at the factory, later became Cleveland branch manager, and for the past five years he was zone manager on the Pacific Coast before coming to Brooklyn.

BUSES REPLACE TROLLEYS

Raleigh, N. C., Nov. 29.—Buses will replace street cars on the streets of Raleigh in December, it was announced here following completion of negotiations with the Carolina Light and Power Company. The power company will maintain a city-wide bus service instead of the present street car service, it was announced by W. H. Weatherspoon, vice-president of the company.

Cumulative New Commercial Car Registration Statistics, October, 1932

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Sprinfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Metropolitan district figures compiled by Sherlock & Arnold are included in New York state total. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies. Some of this data has been published previously, but it is given here complete for the convenience of our subscribers.

Returns for today: Alabama, Arizona, Mississippi, Nevada, New York, Oklahoma, Tennessee and Texas

In this table, 46 states and the District of Columbia Comparative figures for October, 1931, on Page 12 Commercial car figures do not include buses.

States	Autocar	Brockway	Chevrolet	Diamond-T	Dodge	Federal	Ford	G. M. C.	Indiana	International	La France-Republic	Mack	Pierce-Arrow	Reo	Sterling	Stewart	Studebaker	White	Willys-Overland	Miscellaneous	Totals	States
Alabama			103		4	1	78	10	1	18							3			10	228	Alabama
Arizona			22		4		23	1		1											51	Arizona
Arkansas			125		4		116	3		22							1	1		1	273	Arkansas
California	3		274		42	1	418	19	4	35	1	5	1	4	3	5	28	3	3	18	867	California
Connecticut	5	1	92	4	15	6	99	8	3	26		4	1	9		2	4				279	Connecticut
Delaware			11				7	2	1	3										1	25	Delaware
Florida			87	9	6	7	89	1	3	27				2				1	1	24	257	Florida
Georgia			68		4	4	101	2	4	8		2		1				1		8	203	Georgia
Idaho			14				15			7				1							37	Idaho
Illinois	1		159	20	18	2	190	9	3	53		3		9			3	2	1	8	481	Illinois
Indiana			108	5	12		112	14	13	31		1		7			9		2	3	317	Indiana
Iowa			119	6	8		106	6		34		1	1	2			3		3	5	294	Iowa
Kansas			132	10	7		119	11		35		1		2			5		1	3	326	Kansas
Kentucky			65	6	11	1	134	7	3	48		1		2		1	4	1	1	2	287	Kentucky
Louisiana			75	2	7		91	9	1	22		1					1	2		10	221	Louisiana
Maine	2		55		4		55	3	1	10				3			4				137	Maine
Maryland	4	7	83	7	15	1	83	11	2	25		2		5			1	1		3	250	Maryland
Mass'chusetts	13	2	167	13	25	12	295	40	1	49	4	7		16	1	5	6	5		10	671	Mass'setts
Michigan			142	3	26	3	206	15		49				8			11	3	1	2	469	Michigan
Minnesota		1	136	3	20	3	110	5		26	1	7		12		1	6		2	2	335	Minnesota
Mississippi			46		1		83	2	2	10										1	145	Mississippi
Missouri	5		190	9	27	4	208	22	7	45	2			6	1		4			2	532	Missouri
Montana			23		1		54		29					4			3	1	3	1	119	Montana
Nebraska			74	3	1	1	62	2	2	20		1		2			2			2	172	Nebraska
Nevada			15				17			1							2			1	36	Nevada
N. Hampshire			34	1	3		44	3		5		1		2		2			2		97	New Hamp.
New Jersey	7	1	154	6	30		206	19	9	33		11		24		1	3	4	4	6	518	New Jersey
New Mexico			22	1	2		42		1	1											69	New Mexico
New York	28	33	436	34	99	15	674	84	11	151	1	33	2	29	2	16	23	21	9	37	1738	New York
No. Carolina			262		16		180	17		18				3				3		12	511	No. Carolina
North Dakota			17		2		23	3		9							1				55	No. Dakota
Ohio	2		149	14	30		318	35	15	52		3		8			19		7	10	662	Ohio
Oklahoma			162		8	3	127	5	5	28				2			2		2	2	346	Oklahoma
Oregon			32		2	1	48	5		10				1			2	1		1	103	Oregon
Penn'vania	16	10	401	14	97	4	458	46	12	108	1	11		10	1	9	18	10	10	16	1252	Penn'vania
Rhode Island	1		16		4	1	52	2		4			6	3				1			90	Rhode Island
So. Carolina			52		6		68		1	1							1	1		1	131	So. Carolina
S. Dakota			13	2	3		18			9							2				47	S. Dakota
Tennessee			97	5	10	4	95	6	7	35		3		1			2	3	1	4	273	Tennessee
Texas			419	4	15	4	384	15	6	70		3		3			2	3	2	7	937	Texas
Utah			26		3		15	1		3		2									50	Utah
Vermont			11	2	2		29	1		5				1							51	Vermont
Virginia	3		129	5	6	1	136	16	1	14		2		8				2		6	329	Virginia
Washington			57		5	2	67	9	3	14		1					6	1		2	167	Washington
West Virginia	2		48	2	12		74	2	5	7				6			2		1	2	163	W. Virginia
Wisconsin			92	3	10	1	87	5		17				2	2	1	3		2	3	228	Wisconsin
Dist. of Col.	6	3	23	2	7		45	7		8						1				2	104	Dist. of Col.
Totals	98	58	5037	195	634	82	6061	483	156	1207	10	106	11	198	10	44	186	71	58	228	14933	Totals

Major Specifications and Mechanical Details of 1932 Commercial Cars

LEADING MAKES NATIONALLY DISTRIBUTED

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brake Lining	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
Austin	400	225	Own	L	4	2.2x3	48.6	7.8	13@3200	G	Hex	Rock	Spic	Own	Til	Gra	Aut	W-G	3	Sal	Sp	5.25	O4M	76.5	75	——	18x3.75	18x3.75
Autocar R	1½	2250	Own	L	6	3¾x4¾	314.0	33.7	75@2400	G	G & O	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Own	Sp	33.5	LO4IHM	380	159	5370	20x7.00	20x7.00D
Autocar RE	2	2300	Own	L	6	3¾x4¾	314.0	33.7	75@2400	G	G & O	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Own	Sp	33.5	LO4IHM	380	159	5400	20x7.50	20x7.50D
Autocar RF	3	2450	Own	L	6	3¾x4¾	314.0	33.7	75@2400	G	G & O	Br-L	Spic	Ross	Str	P	DR	Own	4	Own	Sp	33.0	LO4IHM	380	159	5630	20x8.25	20x8.25D
Autocar RG	2½	2600	Own	L	6	3¾x4¾	314.0	33.7	75@2400	G	G & O	Br-L	Spic	Ross	Str	P	DR	Own	4	Own	2R	39.3	LO4IHM	460	159	5880	34x7	34x7D
Autocar A	2½	3000	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	Sp	33.0	LO4IV	460	150	6350	20x8.25	20x8.25D
Autocar D	3	3500	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	39.3	LO4IV	460	150	6375	34x7	34x7D
Autocar DE	3½	3850	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	40.7	LO4IV	519	150	6890	20x9.00	20x9.00D
Autocar DF	3½	3950	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	40.7	LO4IV	519	150	7220	20x9.00	20x9.00D
Autocar DH	4	4150	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	54.3	LO4IV	519	150	7450	36x8	36x8D
Autocar N	4	4600	Own	L	6	4½x4¾	404.0	43.4	94@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	45.6	LO4IV	519	191½	7990	20x9.75	20x9.75D
Autocar NE	5	4725	Own	L	6	4½x4¾	404.0	43.4	94@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	5	Own	2R	50.1	LO4IV	519	149	8300	22x9.75	22x9.75D
Autocar NF	5	4800	Own	L	6	4½x4¾	404.0	43.4	94@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	5	Own	2R	42.1	LO4IV	519	191½	8350	22x9.75	22x9.75D
Autocar NH	5	4925	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Own	5	Own	2R	50.1	LO4IV	519	149	8350	22x9.75	22x9.75D
Autocar S	5	5500	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	54.0	LO4IV	544	158	8700	22x9.75	22x9.75D
Autocar SE	6	5800	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	54.0	LO4IV	544	158	8850	22x10.50	22x10.50D
Autocar C	7½	6600	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Br-L	12	Wis	2R	120.5	LO4IV	664	158	10950	24x10.50	24x10.50D
Autocar CF	7½	6900	Wak	L	6	5 x5¼	677.0	60.0	126@1800	G	Own	Br-L	Spic	Ross	Str	P	DR	Br-L	12	Wis	2R	120.5	LO4IV	664	164	11280	24x10.50	24x10.50D
Autocar T	7½	6000	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Own	12	Own	2R	88.5	O4IA	544	192	9700	22x10.50	22x10.50D
Autocar TE	8½	6500	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Br-L	12	Own	2R	87.6	O4IA	660	192	10700	24x10.50	24x10.50D
Autocar TF	8½	6800	Wak	L	6	5 x5¼	677.0	60.0	126@1800	G	G & O	Br-L	Spic	Ross	Str	P	DR	Br-L	12	Own	2R	87.6	O4IA	660	195	10950	24x10.50	24x10.50D
*Autocar FE	20	9500	Ste	L	6	5½x6	780.0	66.2	156@1800	G	G & O	Br-L	Spic	Ross	Zen	P	NE	Br-L	12	Wis	2R	96.0	T4IA	664	180	12300	24x10.50	24x10.50D
**Autocar 6GE	15	11000	Ste	L	6	5½x6	780.0	66.2	156@1800	G	G & O	Br-L	Spic	Ross	Zen	P	NE	Br-L	12	Tim	Wo	99.6	T6IA	718	198	16300	22x9.75	22x9.75D
***Autocar HS	3½	4600	Own	L	4	4¼x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2R	54.3	O2IM	516	114	7600	40x8	40x8D
***Autocar 8HS	3½	4800	Own	L	6	4¼x4¾	404.0	43.4	94@2500	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2R	54.3	O2IM	516	114	7900	40x8	40x8D
Brockway 80 C	*9500	1215	Con	L	6	3¾x4	214.7	27.3	71@3200	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	36.2	CB4IM	248	149	4075	20x6.00	20x6.00D
Brockway 90 C	*11500	1525	Con	L	6	3¾x4¾	248.2	27.3	70@3200	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	37.4	L4IH	353	149	4355	20x6.50	20x6.50D
Brockway 92 C	*12500	1800	Con	L	6	3¾x4¾	248.2	27.3	70@3200	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	37.4	L4IH	353	149	4450	32x6	32x6D
Brockway 120 C	*15000	1990	Con	H	6	4 x4½	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Tim	Sp	38.5	L4IH	353	156	5500	32x6	32x6D
Brockway 140 C	*17500	2495	Con	H	6	4 x4½	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	43.5	L4IHV	386	156	6100	32x6	32x6D
Brockway 141 C	*19500	2925	Con	H	6	4 x4½	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	46.2	L4IHV	380	170	6500	32x6	32x6D
Brockway 150 C	*19500	3160	Con	H	6	4¼x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	46.6	L4IHV	380	170	7100	32x6	32x6D
Brockway 175 C	*19500	3460	Con	H	6	4¾x4¾	427.5	45.9	100@2400	C	G & O	Ful	Spic	Ross	Zen	P	*Aut	Ful	5	Wis	2R	46.6	L4IHV	380	170	7200	34x7	34x7D
Brockway 195 C	*22000	3820	Con	H	6	4¼x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	52.4	L4IHV	471	170	8100	34x7	34x7D
Brockway 220 C	*25000	4560	Con	H	6	4¾x4¾	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	50.7	L4IHV	546	170	8675	36x8	36x8D
Brockway 260 C	*28000	5850	Con	H	6	4½x5¼	521.6	48.6	120@2200	C	G & O	Ful	Spic	Ross	Zen	P	*Aut	Ful	4	Wis	2R	53.7	L4IHV	546	212	9000	22x10.50	22x10.50D
Chevrolet	½	345	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	3	Own	Sp	14.6	O4IM	101	109	*1880	19x4.75	19x4.75
Chevrolet	1½	520	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	——	—	131	2700	30x5	32x6
Chevrolet	1½	575	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	O4IM	170	157	3015	30x5	30x5D
Diamond T 210 S F	1½	545	Her	L	6	3⅜x4¼	228.0	27.3	60@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	196	135½	3100	20x5.50B	20x6.50B
Diamond T 210 FF	1½	645	Her	L	6	3⅜x4¼	228.0	27.3	60@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	196	135½	3100	20x5.50B	20x6.50B
Diamond T 240 A	1½	795	Her	L	6	3⅜x4¼	228.0	27.3	60@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	216	137	3503	20x6.00B	32x6P
Diamond T 310	2	995	Her	L	6	3⅜x4¼	263.0	31.5	68@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	350	155	4700	20x6.50B	20x6.50DB
Diamond T 320	2½	1295	Her	L	6	3¾x4¼	282.0	33.7	76@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cla	5	Cla	Sp	——	L4IH	350	155	4700	20x7.00B	20x7.00DB
Diamond T 410A	3	1695	Her	L	6	4 x4½	339.0	38.4	100@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	5	Cla	Sp	——	L4IHV-T	350	160¾	5400	20x7.50B	20x7.50DB
Diamond T 510	4	1995	Her	L	6	4 x4½	339.0	38.4	100@2800	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	——	L4IHV-T	408	168	6000	20x7.00B	20x8.25 DB
Diamond T 410B	3	2135	Her	L	6	4 x4½	339.0	38.4	100@2800	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	4	Cla	Sp	——	L4IHV-T	408	200	6100	20x7.50B	20x7.50DB
Diamond T 504 A	3	2650	Her	L	6	4 x4½	339.0	38.4	100@2800	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	——	L4IHV-T	408	176½	6400	20x8.25B	20x8.25DB
Diamond T 506 A	3	2950	Her	L	6	4¼x4½	383.0	43.3	91@2200	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	5	Wis	2 R	——	L4IHV-T	408	184	6400	20x8.25B	20x8.25DB
Diamond T 603	3-4	3395	Her	L	6	4¼x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV-T	499	169	7500	20x9.00B	20x9.00DB
Diamond T 606 B	3-4	3695	Her	L	6	4¼x5¼	501.0	48.6	110@2200	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	5	Wis	2 R	——	L4IHV-T	499	187½	7500	20x9.00B	20x9.00DB
Diamond T 750	4-5	4925	Her	L	6	4¾x5¼	529.0	51.4	114@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	W4IA-T	552	178	9300	22x9.75B	22x9.75DB
*Diamond T 801	4	4140	Her	L	6	4¾x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Own	Wo	——	L6IHV-1	571	189½	8300	36x8P	36x8P
*Diamond T 1201	6	5600	Her	L	6	4¼x5¼	501.0	48.6	110@2200	G	G & O	Cov	SpicBlo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	W4IA-T	238	190	11000	34x7P	34x7DP
*Diamond T 1602	8	6450	Her	L	6	4¾x5¼	529.0	51.4	114@2200	G	G & O	Cov	SpicBlo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	W4IA-T	238	190	11700	36x8P	36x8DP
*Diamond T 1603	8	7500	Wak	L	6	5 x5¼	677.4	60.0	125@2000	G	G & O	Br-L	SpicBlo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	W4IA-T	238	194	12500	36x8P	36x8DP
Dodge Bros. UF 10	½	375	Own	L	4	3⅝x4¼	196.0	21.0	48@2800	G	Fed	Borg	Un	Own	Car	P	DR	Own	3	Own	Sp	12.8	O4IH	121	109	1925	19x5.00	19x5.00
Dodge Bros. F 10	½	445	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Un	Own	Car	P	DR	Own	3	Own	Sp	12.8	O4IH	121	109	1975	19x5.25	19x5.25
Dodge Bros. G. 20	¾-1	597	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IH	175.8	131	2520	17x7.50	17x7.50
Dodge Bros. G 21	¾-1	622	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IH	175.8	157	2670	17x7.50	17x7.50
Dodge Bros. UG 20	¾-1	577	Own	L	4	3½x4¼	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IH	175.8	131	2450	17x7.50	17x7.50
Dodge Bros. UG 21	¾-1	562	Own	L	4	3½x4¼	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IH	175.8	157	2600	17x7.50	17x7.50
Dodge Bros.	1	595	Own	L	6	3⅝x3¼	208.0	27.3	63@3200	C	Fed	Borg	Un	Han	Zen	P	DR	Own	4	Own	Sp	33.4	O4IH	206	133	2690	20x6.00	32x6
Dodge Bros. UG 30	1½	523	Own	L	4	3½x4¼	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IH	176	131	2490	20x6.00	32x6
Dodge Bros. UG 31	1½	550	Own	L	4	3½x4¼	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IH	176	157	2640	20x6.00	36x8
Dodge Bros. G 30	1½	585	Own	L	6	3¼x4¼	211.5	25.3	66@3100	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IH	176	131	2560	20x6.00	32x6
Dodge Bros. UF 30	1½	595	Own	L	4	3½x4¼	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	187	136	2581	20x6.00	32x6
Dodge Bros. G 31	1½	610	Own	L	6	3¼x4¼	211.5	25.3	66@3100	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IH	176	157	2710	20x6.00	32x6
Dodge Bros. UF 31	1½	670	Own	L	4	3½x4¼	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	229	165	2757	20x6.00	32x6
Dodge Bros. F 30	1½	695	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	187	136	2631	20x6.00	32x6
Dodge Bros. F 31	1½	770	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	229	165	2807	20x6.00	32x6
†Dodge Bros. UGS 30	1½-3	675	Own	L	4	3½x4¼	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O61HV	273.2	153	3575	20x6.00	32x6S
†Dodge Bros. GS 30	1½-3	935	Own	L	6	3¼x4¼	211.5	25.3	66@3100	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O61HV	273.2	153	3650	20x6.00	32x6S
Dodge Bros. F 35	1½	1425	Own	L	6	3⅝x3¼	208.0	27.3	63@3200	C	Fed	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	O4IH	305	140	3780	20x6.00	20x6.00D
Dodge Bros. F 36	1½	1485	Own	L	6	3⅝x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	O4IH	305	165	3972	20x6.00	20x6.00D
Dodge Bros. G 43	2	795	Own	L	6	3¼x4¼	217.7	25.3	73@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	50.0	O4IH	229	136	3345	20x7.00	20x7.00D
Dodge Bros. G 44	2	825	Own	L	6	3¼x4¼	217.7	25.3	73@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	50.0	O4IH	229	165	3470	20x7.00	20x7.00D
*Dodge Bros. F 40	2	1095	Own	L	6	3⅝x5	309.6	31.5	86@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O4IH	359	150	5173	20x6.50	20x6.50D
*Dodge Bros. F 41	2	2085	Own	L	6	3⅝x5	309.6	31.5	86@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O4IH	359	165	5211	20x6.50	20x6.50D
Dodge Bros. F 42	2	2180	Own	L	6	3⅝x5	309.6	31.5	86@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O4IH	359	190	5311	20x6.50	20x6.50D
†Dodge Bros. GS 55	2-4	1260	Own	L	6	3¼x4¼	217.7	25.3	73@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	50.0	O61HV	365	158	4450	20x7.00	20x7.00D
Dodge Bros.	3	1565	Own	L	6	3½x4½	241.0	27.3	78@3300	C	Fed	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	O4IH	382	165	4620	32x6	32x6D
Dodge Bros.	3	1615	Own	L	6	3½x4½	241.0	27.3	78@3300	C	Fed	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	O4IH	382	185	4715	32x6	32x6D
Dodge Bros. F 60	3	2645	Own	L	6	3⅝x5	309.6	31.5	86@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	2 R	56.0	O4IH	416	146	5543	32x6	32x6D
*Dodge Bros. F 61	3	2575	Own	L	6	3⅝x5	309.6	31.5	86@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.8	O4IH	416	170	5789	32x6	32x6D
*Dodge Bros. F 62	3	2695	Own	L	6	3⅝x5	309.6	31.5	86@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.8	O4IH	416	195	5301	32x6	32x6D
Dodge Bros. G 80	4	5250	Own	L	8	3½x5	384.8	39.2	115@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	65.7	B4IA-T	650	146	7640	20x9.75	20x9.75D
Dodge Bros. G 81	4	5285	Own	L	8	3½x5	384.8	39.2	115@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	69.6	B4IA-T	650	170	7840	20x9.75	20x9.75D
Dodge Bros. G 82	4	5350	Own	L	8	3½x5	384.8	39.2	115@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	69.6	B4IA-T	650	195	8040	20x9.75	20x9.75D
Dodge Bros. G 83	4	5415	Own	L	8	3½x5	384.8	39.2	115@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	69.6	B4IA-T	650	220	8400	20x9.75	20x9.75D
Essex Com.	¾	435	Own	L	6	2¾x4½	153.0	18.2	55@3300	C	Har	Own	Spic	Gem	Mar	Vac	Aut	Own	3	Own	Sp	5.40	4M	147	110½	1970	20x5	20x5.50
Federal D 3	*1½	670	Con	L	4	3¼x4¼	200.5	24.0	50@2700	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	191	130	3225	20x6.00	32x6
Federal E 3	*1½	695	Con	L	6	3¼x4	215.0	27.3	72@3400	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	191	130	3225	20x6.00	32x6
Federal F 7	*1¾	1325	Con	L	6	3¼x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	Own	4	Tim	Sp	29.2	L4IH	247	132	3765	30x5	30x5D
Federal F 8	*2	1425	Con	L	6	3¼x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	Own	4	Tim	Sp	34.0	L4IH	269	132	3865	30x5	30x5D
Federal G 5	2	995	Con	L	6	3⅝x4	215.0	27.0	72@3400	C	Long	Borg	Cle	Gem	Zen	P	DR	Own	4	Tim	Sp	34.0	L4IH	269	132	3800	20x6.50B	20x6.50DB
Federal A 6	*2	1695	Con	L	6	3¼x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Cla	Sp	38.5	L4IH	270	151	4580	32x6	32x6D
Federal A 6 T	*2½	1995	Con	L	6	3¼x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	47.1	L4IHV	379	151	5110	32x6	32x6D
Federal A 6 T W	*2½	2130	Con	L	6	3¼x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	52.9	L4IHV	379	151	5110	32x6	32x6D
Federal T 3 W	*2½	1595	Wau	L	4	4 x5	251.0	25.6	50@2000	G	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Wo	36.3	L4IH	337	148	5110	32x6	36x8
Federal T 3 W F A	*2½-3	1795	Wak	L	4	4 x5	251.0	25.6	50@2000	G	Long	Borg	Cle	Ross	Zen	Vac	DR	Own	4	Tim	Wo	43.9	L4IHV	379	148	5400	32x6	32x6D
*Federal D 2 S W	*3	1050	Con	L	4	3¼x4¼	200.5	24.0	50@2700	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	312	140	3925	20x6.00	32x6
*Federal E 2 S W	*3	1150	Con	L	6	3⅝x4	215.0	27.3	60@2600	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	312	145	3975	20x6.00	32x6
*Federal D 2 D	*3	1350	Con	L	4	3¼x4¼	200.5	24.0	50@2700	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	312	140	4235	20x6.00	32x6
*Federal E 2 D	*3	1450	Con	L	6	3⅝x4	215.0	27.3	60@2600	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	312	145	4310	20x6.00	32x6
Federal T 10 B	*3½-4	2550	Con	H	6	4 x4½	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	44.5	L4IHV	359	165	6550	34x7	34x7D
Federal T 10 W	*3½-4	2635	Con	H	6	4 x4½	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Wo	44.0	L4IHV	379	165	6550	34x7	34x7D
Federal T 10 D R	*3½-4	2685	Con	H	6	4 x4½	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	2R	45.6	L4IHV	379	165	6550	34x7	34x7D
Federal A 600	*2½-3	1745	Con	L	6	3¼x4½	258.3	32.6	73@2600	C	Long	Borg	Cle	Ross	Zen	P	DR	Own	4	Cla	Sp	41.5	L4IH	270	157	5050	20x7.50	20x7.50D
Federal A 600 T	*3-3½	2045	Con	L	6	3¼x4½	258.3	32.6	73@2600	C	Long	Borg	Cle	Ross	Zen	P	DR	Own	4	Tim	Sp	50.7	L4IHV	379	157	6100	20x8.25	20x8.25D
Federal A 600 T W	*3-3½	2185	Con	L	6	3¼x4½	258.3	32.6	73@2600	C	Long	Borg	Cle	Ross	Zen	P	DR	Own	4	Tim	Wo	48.8	L4IHV	379	157	6100	20x8.25	20x8.25D
Federal A 600 T D R	*3-3½	2180	Con	L	6	3¼x4½	258.3	32.6	73@2600	C	Long	Borg	Cle	Ross	Zen	P	DR	Own	4	T

Major Specifications and Mechanical Details of 1932 Commercial Cars

LEADING MAKES NATIONALLY DISTRIBUTED

(Continued from Page 9)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brake Lining	Standard Wheel Base	Chassis Wgt.	Tire Sizes Standard Front	Tire Sizes Standard Rear
Gramm A X 4	1	795	Con	L	4	3⅞x4½	200.4	24.0	50@2800	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	*3300	20x6.00	20x6.50
Gramm A X 6	1	895	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4TH	380	131	3550	20x6.00	20x6.50
Gramm B X 4	1½	895	Con	L	4	3⅞x4½	200.4	24.0	50@2800	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3475	20x6.00	20x6.00D
Gramm B X 6	1½	995	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3725	20x6.00	20x6.00D
Gramm B	2	1295	Lyc	L	6	3¼x4½	224.0	25.3	61@2900	G	Per	Own	Blo	Ross	Zen	Vac	Aut	Cov	4	Tim	Sp	34.3	L4IH	278	140	4150	20x6.50	20x6.50D
†Gramm C X 4	2	1045	Con	L	4	4¼x4½	227.0	27.2	55@2600	G	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	3900	20x6.50	20x6.50D
Gramm C X 6	2	1295	Con	L	6	3⅜x4½	248.2	27.3	70@3000	C	Per	Own	Blo	Ross	Zen	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	4150	20x6.50	20x6.50D
Gramm C	2	1795	Lyc	L	6	3⅜x4½	278.6	31.5	82@2600	G	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	31.0	L4IH	353	131	4800	20x7.00	20x7.00D
Gramm C F	2½	1395	Lyc	L	6	3¾x4½	299.0	33.7	85@2800	G	Per	Br-L	Blo	Ross	Til	P	Aut	Br-L	4	Tim	Sp	38.2	L4IH	353	160	4900	20x7.50	20x7.50D
Gramm D	2½	1995	Lyc	L	6	3¾x4½	299.0	33.7	90@2200	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	33.0	L4IHV	339	160	5200	20x7.50	20x7.50D
Gramm CXH	2-3	1345	Her	L	6	3¾x4½	282.0	33.7	73@3000	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	37.0	L4IH	353	131	4300	20x6.50	20x6.50D
Gramm L	3	2595	Lyc	L	6	3⅞x5	353.8	36.0	90@2200	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	35.0	L4IHV	374	160	5950	20x8.25	20x8.25D
Gramm F Y	3	3595	Con	H	6	4½x4¾	380.8	40.8	90@2200	G	Per	Ful	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	39.0	L4IHA	—	190	7200	20x7.50	20x7.50D
Gramm EX	3-4	2295	Con	L	6	3¾x4½	318.0	36.0	80@2700	—	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	35.0	L4IHV	339	160	5200	20x8.25	20x8.25D
Gramm ED	3-4½	3995	Cum-D	H	4	4½x6	448.0	38.0	85@1900	G	Per	Br-L	Blo	Ross	Zen	P	L-N	Br-L	4	Tim	Sp	39.0	L4IHV	374	160	5600	20x8.25	20x8.25D
Gramm G	4	3695	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Wis	2R	49.5	L4IHV	768	165	8200	20x9.00	20x9.00D
Gramm G R	4	3695	Lyc	H	6	4⅜x4¾	428.4	45.9	100@2200	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Wis	2R	—	L4IHV	768	165	8200	20x9.00	20x9.00D
Gramm G Y	4	4745	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	G	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2R	28.0	BW4IM	736	210	7700	20x8.25	20x8.25D
Gramm G W	5	5175	Con	H	6	4⅜x4¾	428.0	45.9	100@2200	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Wis	2R	—	41A	864	157	9500	20x9.00	20x9.00D
Gramm GWD	5	6195	Cum-D	H	6	4½x6	672.0	57.0	125@1800	G	Per	Br-L	Blo	Ross	——	P	L-N	Bl	4	Wis	2R	25.5	41A	864	157	9600	20x9.00	20x9.00D
Gramm H Y	5	6545	Con	L	6	4⅜x5¼	611.4	54.1	127@2300	G	Per	Ful	Blo	Ross	Zen	P	Aut	Ful	4	Wis	2R	25.2	41A	996	236	10100	20x9.00	20x9.00D
Indiana 85	1½	885	Her	L	6	3⅝x4¼	263.0	31.5	68@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	35.1	L4IH	249	141	3900	20x6.50	20x6.50D
Indiana 85 DR	1½	1190	Her	L	6	3⅝x4¼	263.0	31.5	68@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	5	Wis	2R	40.1	L4IH	316	141	4200	20x6.50	20x6.50D
Indiana 95	2	1095	Her	L	6	3¾x4¼	282.0	33.7	73@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	36.2	L4IH	353	141	4400	32x6	32x6DP
Indiana 95 DR	2½	1275	Her	L	6	3¾x4¼	282.0	33.7	73@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	41.2	L4IH	353	141	4650	20x7.50	20x7.50DB
Indiana 17	2½	9450	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	37.8	L4IHV	398	170	7000	20x8.25	20x8.25D
Indiana 106 DR	2½	1850	Her	L	6	4 x4½	339.0	38.4	76@2400	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	40.3	L4IHV	353	156	6000	20x7.50	20x7.50D
*Indiana 95 SBT 151	3	1445	Her	L	6	3¾x4¼	282.0	33.7	73@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	45.8	L6HIV	559	168	6500	32x6	32x6DP
*Indiana 95 SW 75	3	1725	Her	L	6	3¾x4¼	282.0	33.7	73@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	45.8	L6HIV	459	186	6200	32x6	32x6DP
Indiana 17 DR	3	2025	Her	L	6	4⅜x4¾	478.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	38.6	L4IHV	398	170	7300	20x8.25	20x8.25D
Indiana 106 SW 151	3	2675	Her	L	6	4 x4½	339.0	38.4	76@2400	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	42.6	L6HIV	559	188	7500	32x6.00P	32x6DP
Indiana 19 DR	3½	3495	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	52.3	L4IHV	489	170	8100	20x9.00	20x9.00D
Indiana 17 SBT 251	4	3250	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	37.8	L6HIV	625	188	8200	34x7	34x7D
*Indiana 17 SW 251	4	3175	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	38.1	L6HIV	625	188	8500	34x7	34x7D
Indiana 43 DR	4	4200	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	50.7	L4IHV	546	170	8500	20x9.75	20x9 75D
Indiana 45 DR	5	4800	Her	L	6	4½x5½	529.0	51.3	115@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	45.4	L4IHV	546	170	8700	20x9.75	20x9 75D
International A 1	¾	615	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	B4IM	212	136	*2887	20x5.50	20x5.50
International M 2	1	850	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	B4IM	217	118	3180	20x6.50	20x6.50
International A 2	1½	615	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	B4IM	212	136	2935	20x6.00	20x6.00
International B 2	1½	665	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	Mec	8	Own	Sp	47.3	B4IM	212	136	2945	20x6.00	20x6.00
International A L 3	1½	1450	Lyc	L	6	3¼x4½	224.0	25.3	54@2700	G	Mod	Own	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	42.9	B4IM*	295	138	4032	20x6.00	20x6.50D
International A X	1½	795	Lyc	L	6	3¼x4½	224.0	25.3	54@2700	G	Mod	Rock	Mec	Ross	Zen	P	DR	W-G	4	Own	Sp	33.8	B4IM*	287	136	3572	20x6.00	20x6.00
International A 3½	1½	970	Lyc	L	6	3¼x4½	224.0	25.3	54@2700	G	Mod	Rock	Mec	Ross	Zen	P	DR	W-G	4	Own	Sp	34.9	B4IM*	302	136	3600	20x6.00	20x6.00D
International A 4	2	1750	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	P	DR	Own	5	Own	Sp	47.8	B4IH*	378	145	5221	32x6	32x6D
International W 1	2½	3850	Hall	H	4	4¼x5½	312.0	28.9	59@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2R	60.5	BO4IM*	710	148	8300	36x5S	36x8S
International A 5	3	2350	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	P	DR	Own	5	Own	Sp	52.6	B4IM*	430	156	5895	34x7	34x7D
International A 6	3	2675	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	P	DR	Own	5	Own	Sp	62.5	B4IM*	430	156	6120	34x7	34x7D
International W 2	3½	4850	Hall	H	4	4¾x5½	390.0	36.1	69@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2R	70.5	BO4IM*	794	160	10125	36x6S	40x12S
International A 7	6-7½	6200	Own	H	6	4½x5½	525.0	48.6	98@1800	G	Mod	Rock	Mec	Ross	Zen	P	DR	Own	5	Own	2R	52.3	BO4IM-T	730	160	11590	20x9.75	20x9 75D
International A 8	7½	6300	Own	H	6	5 x5½	650.0	60.0	115@1800	G	Mod	Rock	Mec	Ross	Zen	P	DR	Own	5	Own	2R	52.3	BO4IM-T	730	160	11590	20x9.75	20x9.75D
Mack B G	——	2500	Own	L	6	3¼x5	248.9	25.4	41@2600	G	Own	Own	Spic	Gem	Str	P	NE	Own	4	Tim	Sp	19 5	L4IH	302	148	4200	20x6.00B	20x6.00DB
Mack B L	——	3000	Own	L	6	3⅜x5	309.6	31.6	75@2500	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Sp	Opt	O4IV	427	156	4950	32x6P	32x6DP
Mack B F	——	4200	Own	L	6	3⅜x5	309.6	31.6	75@2500	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	2R	Opt	O4IV	427	156	6600	20x8.25B	20x8.25DB
Mack A B-4	——	4000	Own	L	4	4¼x5	283.7	28.9	63@2100	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6450	34x7P	34x7DP
Mack A B-4	——	4200	Own	L	4	4¼x5	283.7	28.9	63@2100	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2R	Opt	O4IV	471	164½	6850	34x7P	34x7DP
Mack A B-6	——	4150	Own	L	6	3⅜x5	309.6	31.6	75@2500	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6450	34x7P	34x7DP
Mack A B-6	——	4500	Own	L	6	3⅜x5	309.6	31.6	75@2500	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	2R	Opt	O4IV	471	164½	6850	34x7P	34x7DP
Mack B M	——	4700	Own	L	6	4 x5½	414.7	38.4	94@2400	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	427	157	7500	20x9.00B	20x9.00DB
Mack B C	——	5500	Own	L	6	4 x5½	414.7	38.4	94@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	590	154	8000	36x8P	36x8DP
Mack B O	——	5250	Own	L	6	4 x5½	414.7	38.4	94@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	2R	Opt	O4IV	610	154	7850	36x8P	36x8DP
Mack B X	——	5750	Own	L	6	4¼x5½	468.1	43.3	104@2300	G	Own	Own	Spic	Ross	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	619	160	7900	22x9.75B	22x9.75DB
Mack B X	——	5600	Own	L	6	4¼x5½	468.1	43.3	104@2300	G	Own	Own	Spic	Ross	Str	P	NE	Own	4	Own	2R	Opt	O4IV	619	160	8050	22x9.75B	22x9.75DB
Mack B J	——	6450	Own	L	6	4½x5½	525.5	48.6	125@2100	G	Own	Own	Cle	Han	Str	P	NE	Own	4	Own	2R	Opt	O4IV	618	197	9800	22x10.50B	22x10.50DB
Mack B Q	——	6800	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Cle	Ross	Str	P	NE	Own	4	Own	2R	Opt	O4IV	618	191	10000	22x10.50B	22x10.50DB
Mack A K-4	——	5150	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O4IV	492	174	9500	36x5S	36x8S
Mack A K-4	——	5250	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2R	Opt	O4IV	492	174	9400	36x5S	36x5DS
Mack A K-6	——	6450	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	2R	Opt	O4IV	561	186	10400	22x10.50B	20x10.50DB
Mack A C-4-L	——	4950	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	OJXM	478	156	9100	36x5S	40x5DS
Mack A C-4-M	——	5400	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	OJXM	478	168	9800	36x6S	40x8DS
Mack A C-4-H	——	6000	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	OJXM	478	168	10150	36x7S	40x7DS
Mack A C-6	——	6450	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	755	186	11400	24x10.50B	24x10.50DB
Mack A P	——	8500	Own	L	6	5 x6	706.5	60.0	138@1900	G	Own	Own	Spic	Han	Str	Gra	NE	Own	4	Own	Ch	Opt	O2IV	284	191	11700	36x7S	40x8DS
Mack A K-6 6 wheel	——	9300	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	2R	Opt	O6IV	1044	152-52	15600	22x9.75B	22x9.75DB
Mack A C-6 6 wheel	——	8500	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	Ch	Opt	O6IV	1052	145-52	14300	40x8P	40x8DP
Mack A P 6 wheel	——	10500	Own	L	6	5 x6	706.5	60.0	138@1900	G	Own	Own	Cle	Han	Str	Gra	NE	Own	4	Own	Ch	Opt	O6IV	1052	145-52	14600	40x8P	40x8DP
Mack A P 6 wheel	——	11000	Own	L	6	5 x6	706.5	60.0	138@1900	G	Own	Own	Cle	Han	Str	Gra	NE	Own	4	Own	2R	Opt	O6IV	1044	152-52	15950	22x9.75B	22x9 75DB
Pierce-Arrow 13S 38S	2-2½	2500	Own	L	8	3½x5	385.0	39.2	125@2800	C	Long	Long	Cle	Han	Str	P	DR	Cla	4	Tim	Sp	33.5	B4IM-T	399	160	6000	20x8.25B	20x8.25DB
Pierce-Arrow 13T 38S	3-3½	1950	Her	L	6	3⅜x4½	298.0	33.7	70@2600	G	Long	Long	Cle	Han	Zen	P	DR	Cla	4	Tim	Sp	40 0	B4IM	399	150	5725	20x8 25B	20x8 25DB
Pierce-Arrow 17T 36I	3-4	2150	Her	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Sp	34 4	B4IM	399	180	5800	20x8.25B	20x9.00DB
Pierce-Arrow 18W 36I	3½-4½	3900	Her	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	41 9	B4IA-T	473	150	6660	20x9.00B	20x9 00DB
Pierce-Arrow 19R 42S	3½-4½	3600	Her	L	6	4⅞x4¾	428.0	46.0	94@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	29.6	B3IA	473	150	6860	20x9.00B	20x9 00DB
Pierce-Arrow 22R 59I	4½-5½	3750	Her	L	6	4½x5½	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	36.0	B4IA	473	150	7050	20x9 75B	20x9 75DB
Pierce-Arrow 21X 59I	5-6	4200	Her	L	6	4½x5½	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	40 2	T4IA	618	160	9250	20x10.50B	20x10 50DB
Pierce-Arrow 24M 61I	5-6	5000	Her	L	6	4¾x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Tim	Wo	33 9	T4IA-T	618	160	10200	20x10.50B	20x10.50DB
Pierce-Arrow 28X 59I	6-7	4000	Her	L	6	4½x5½	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	Wo	51 0	TO4IA	720	160	10675	24x10.50B	24x10 50DB
Pierce-Arrow 28M 61I	6-7	5400	Her	L	6	4¾x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Own	Wo	52.5	TO4IA	720	160	11600	24x10.50B	24x10 50DB
Pierce-Arrow 29Y 47S	6-7	4400	Her	L	6	4⅝x4¾	479.0	51.3	104@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	Wo	51 0	TO4IA	720	160	10675	24x10.50B	24x10.50DB
Pierce-Arrow 31K 61I	7½-10	5300	Her	L	6	4¼x4½	361.0	40.3	77@2400	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Own	Wo	42.0	TO4IA	720	170	11675	24x10.50B	40x8DS
Pierce-Arrow 75M 75YT	*75000	6400	Her	L	6	5½x6	779.0	66.1	150@1800	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Own	Wo	51.9	TO4IA	720	180	12750	24x10.50B	24x10.50DB
Pierce-Arrow 27T 36IT	*27000	2450	Her	L	6	4¼x5½	611.0	54.1	130@2000	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Sp	48.1	B4IM	399	150	6725	20x8 25	20x8 25D
Pierce-Arrow 35R 50IT	*35000	3800	Her	L	6	4½x5½	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	47 8	B4IA	473	150	7050	20x9 75	20x9 75D
Pierce-Arrow 45X 50IT	*45000	4800	Her	L	6	4½x5½	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	57.2	T4IA	618	160	9300	20x10 50	20x10 50D
†Pierce-Arrow 31L 50IS4	*34000	6400	Her	L	6	4½x5½	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	49.0	T6IA	1022	200	13200	20x9 75	20x9 75D
†Pierce-Arrow 41K 79S4	*44000	7500	Her	L	6	5½x6	779.0	66.1	150@1800	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Tim	Wo	47.2	T6IA	1022	200	14500	20x10.50	20x10 50D
†Pierce-Arrow 51K 61IS4	*34000	7200	Her	L	6	4¾x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Tim	Wo	40 6	T6IA	1022	200	14200	20x9 75	20x9 75D
Reo 1 A	1½	625	Own	L	4	3⅛x4½	205.0	23.3	51@2500	G	Per	Long	Cle	Ross	Zen	P	DR	Own	4	Cla	Sp	37.1	4IH	246	130	2930	20x6.00	32x6
Reo 1 C	1½	665	Own	L	4	3⅛x4½	205.0	23.3	51@2500	G	Per	Long	Cle	Ross	Zen	P	DR	Own	4	Cla	Sp	37 1	4IH	246	160	3020	20x6.00	32x6
Reo 1 B	1½	795	Own	L	6	3¼x5	230.0	23.4	68@2800	C	Own	Own	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	34.8	4IH	246	140	3100	20x6.00B	32x6
Reo 1 D	1½	835	Own	L	6	3¼x5	230.0	23.4	68@2800	C	Own	Own	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	37.1	4IH	246	164	3200	20x6.00	32x6
Reo 2B	2	1095	Own	L	6	3⅜x5	268.0	27.3	75@2300	C	Own	Long	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	6.6	4IH	289	142	3865	20x6.50	20x6.50D
Reo 2 D	2	1135	Own	L	6	3⅜x5	268.0	27.3	75@2800	C	Own	Long	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	5.65	4IH	289	166	4015	20x6.50	20x6.50D
Reo 2 H	2	1625	Own	L	6	3⅜x5	268.0	27.3	75@2800	C	McC	Br-L	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	6.5	4IH	289	142	4475	20x7.00	20x7.00D
Reo 2 J	2	1695	Own	L	6	3⅜x5	268.0	27.3	75@2800	C	McC	Br-L	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	6.5	4IH	289	166	4650	20x7.00	20x7.00D
Reo 3 H	3	2035	Own	L	6	3⅝x5	309.6	31.5	85@2800	C	McC	Br-L	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	6.5	4IH	344	153	5125	20x7.50	20x7.50D
Reo 3 J	3	2085	Own	L	6	3⅝x5	309.6	31.5	85@2800	C	McC	Br-L	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	6.5	4IH	344	170	5285	20x7.50	20x7.50D
Reo 3 K	3	2165	Own	L	6	3⅝x5	309.6	31.5	85@2800	C	McC	Br-L	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	6.5	4IH	344	185	5400	20x7.50	20x7.50D
Reo 4 G	4	3070	Own	L	8	3⅜x5	358.0	36.4	110@2800	C	Own	Long	Cle	Ross	Sch	P	DR	Own	4	Own	Sp	7.16	4IH	390	150	6210	20x9.00	20x9 00D
Reo 4 J	4	3125	Own	L	8	3⅜x5	358.0	36.4	110@2800	C	Own	Long	Cle	Ross	Sch	P	DR	Own	4	Own	Sp	6.14	4IH	390	170	6340	20x9.00	20x9 00D
Reo 4 K	4	3260	Own	L	8	3⅜x5	358.0	36.4	110@2800	C	Own	Long	Cle	Ross	Sch	P	DR	Own	4	Own	Sp	6.14	4IH	390	190	6455	20x9.00	20x9.00D
Stewart 41 X	¾	695	Lyc	L	6	3⅛x4½	207.0	23.44	58@2600	G	Fed	Borg	Spic	Ross	Zen	P	DR	W-G	4	Cla	Sp	5.40	B4	180	124	2875	18x6.50	18x6.50
Stewart 42 X	1½	795	Lyc	L	6	3¼x4½	224.0	25.3	62@2600	G	Fed	Borg	Spic	Ross	Zen	P	DR	W-G	4	Cla	Sp	35 1	B4IM	257	134	3730	20x6.50	20x6 50
Stewart 43 X	2	995	Lyc	L	6	3¼x4½	242.0	27.3	62@2800	G	Fed	Borg	Spic	Ross	Zen	P	DR	W-G	4

ONE ROAD FAILURE EVERY 11,931 MILES NEW BUS RECORD

(Continued from Page 8)

wheels, armatures and fields, controllers, resistances, circuit breakers and other electrical units, compressors, axle and armature bearings, bus engines, transmissions, rear axle assemblies, gas-electric generators and motors, radiators, gasoline tanks, hoods and fenders.

A complete ignition department overhauls ignition generators, starters, magnetos, carburetors and batteries.

A completely equipped spring shop has just been established for the manufacture and repair of bus springs.

Hundreds of broken or worn parts are welded and machined each month in the blacksmith and machine shops. New castings are machined and put into stock for the use of the maintenance men in carhouses and bus garages.

Every effort is made to utilize the most efficient method known to modern shop practice.

In addition to unit overhaul, many other activities of the most varied nature are carried on at the shops.

Signs of all descriptions are lettered in the sign department of the paint shop.

New buses bought complete from bus manufacturers arrive with only a priming coat and are finished in the paint shop.

Hundreds of requisitions for material for the upkeep of the various company buildings are received and filled each week.

Considerable work is constantly being done in the way of experimenting with new ideas of construction.

ON THE OTHER HAND

STARTS OPERATIONS

New Brunswick, N. J., Nov. 29.—The New Brunswick Paper Box Company has started operations in the Jelin building and is now prepared to fill orders for paper boxes or cardboard cartons.

Equipment has been installed to permit the filling of all orders for paper boxes or cardboard cartons and estimates on any quantity of boxes will be furnished upon request.

This is the only paper box company in or around New Brunswick since the closing of the National Musical String Box Company.

WINTER SALES BRISK

Chicago, Nov. 29.—Active holiday buying was recorded in the market today held in conjunction with the general presentation of winter clearance. This sale of heavy merchandise will continue through Wednesday. Several selling surprises were registered. The interest in domestics and in cotton print cloths and percales of the advance spring types was good both in house trade and mail orders. Another satisfaction was the number of orders in the house, and their size, for draperies and floor coverings, while the usual winter items of blankets and comfortable, were offered at clearance prices and moved steadily but without individual order volume.

REPORTS IMPROVEMENT

Springfield, Mass., Nov. 29.—Stanley C. Hope, president of the Gilbert & Barker Manufacturing Company, returned a few days ago from a trip through the South and Southwest, attending the annual meeting of the American Petroleum Institute in Houston, Tex. He had numerous reports to the effect that the oil industry is showing an improvement, it being stated that new proration laws are proving beneficial. General business in the South is said to show but little recovery, indications being that no marked change will be experienced before next spring.

GOING AT CAPACITY

Monson, Mass., Nov. 29.—One of the woolen mills in town is operating at capacity as the result of a fair sized order received recently. Owing to the fact that the Monson mills produce goods of high quality their business has suffered severely for the past two or three years when the tendency has been to use goods of a cheaper grade.

The present order is understood to be for automobile upholstery of a very high quality and perhaps it means that the poorer grades have not given good satisfaction.

CLOSE TO 1931 LEVELS

Boston, Nov. 29.—"Business in gift sets of sheets and pillow cases has taken a noticeable upturn and if our volume thus far this month is maintained our total for the year will be close to that of 1931, which established the peak for gift sets," declared Treasurer Ernest N. Hood of Pequot Mills, Salem, Mass., today.

"Sales of this type of merchandise, while fairly good throughout the year, began to show a real surge in late October and early this month," he said. "Since election orders have shown further increases."

USES OF STAINLESS STEELS

(Continued from Page 5)

because of their corrosion resistance. This also applies to the use of stainless steels in the aircraft industry. In one plane built recently all structural members are of 18-8 chrome-nickel steel.

The great resistance of stainless steels to nitric acid and other powerful oxidizing agents has opened up an extensive field in chemical manufacture, while their resistance to high-temperature oxidation and scaling and their high creep strength at elevated temperatures has resulted in an increasing use of these steels for equipment operating under highly adverse conditions.

The potential field of application in shipbuilding is enormous, stainless steels being used for fittings and parts subject to the action of salt air, spray and immersion in sea water. As in the marine field, stainless steels are used by architects for increased utility and lasting beauty for building trim. Their corrosion-resistant properties render them particularly suitable for use where a permanent, silvery finish is desired.

Although the use of stainless steels on the railroads is in the early stages of development, a railway passenger car has been built entirely of stainless steel with a remarkable saving in weight.

AUTOMOBILES REPLACE TRAINS IN MONTANA

St. Paul, Nov. 29.—Under authority from the Montana State Railroad Commission, the Northern Pacific early in December will inaugurate bus and truck highway service between Billings and Bridger, Mont., a distance of forty-four miles.

Already the company operates such a service between Miles City and Billings, a distance of 148 miles, along the main line. The Billings-Bridger service will be along a branch line. Operation of this service will enable the railroad to eliminate one train a day each way.

The service will be on a station-to-station basis and will handle passengers, express, mail and less-than-carlot freight. It will be operated by the Northern Pacific Transport Company, a subsidiary wholly owned by the railway company.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Major Specifications and Mechanical Details of 1932 Commercial Cars

LEADING MAKES NATIONALLY DISTRIBUTED

(Continued from Page 10)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H.P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brake Lining	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
White 621	*18000	4650	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	OL4IHV	484	157	7945	20x9.00B	20x9.00DB
White 640	*20000	6100	Own	H	6	4¾x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	Sp	33.9	O4IA	553	180	9200	20x9.00B	20x9.00DB
White 630	*20000	5000	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O4IHV	553	168	8500	20x9.00B	20x9.00DB
White 58	*22000	4400	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	49.7	OPXM	224	180	7797	36x5	36x5SD
White 630 A	*22000	5000	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O4IHV	553	168	8500	20x9.00B	20x9.00DB
White 641	*24000	6450	Own	H	6	4⅝x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	46.9	O4IA	633	180	9700	20x9.75B	20x9.75DB
*White 630 SW280	*24000	6245	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	44.2	OTHV	677	193	10000	20x8.25B	20x8.25DB
White 631	*24000	5750	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	2R	58.9	O4IHV	633	168	9000	20x9.25B	20x9.25DB
White 642	*28000	6750	Own	H	6	4⅝x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	633	180	10600	24x9.75B	24x9.75DB
White 58 SS	*30000	5300	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Ross	Zen	Vac	L-N	Own	4	Own	2R	77.6	OPXM	224	196	9300	24x10.50B	24x10.50DB
White 643	*32000	6950	Own	H	6	4⅝x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	633	180	10900	34x10.50B	24x10.50DB
White 661	*32000	7250	Own	H	6	4⅝x5¾	580.0	51.3	127@2050	C	Own	Own	Spic	Ross	Zen	P	DR	Own	5	Own	2R	63.0	O4IA	623	129½	12200	24x10.50B	24x10.50DB
*White 642 SW320	*34000	8025	Own	H	6	4⅝x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	55.6	OTIA	833	198	12670	20x9.00B	20x9.00DB
*White 643 SW420	*40000	8550	Own	H	6	4⅝x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	69	OTIA	833	198	14400	40x8	40x8D
Willys-Overland 6-C-113	½	415	Own	L	6	3¼x3¾	193.0	25.3	65@3400	C	Fed	Own	Spic	Own	Til	P	Aut	Own	3	Own	Su	12.4	B4IM	143	113	1920	19x6.00B	19x6.00B
Willys-Overland 6-C-131	1½	595	Own	L	6	3¼x3¾	193.0	25.3	65@3400	C	Fed	Own	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	235	131	2750	20x5.50B	32x6P
Willys-Overland 6-C-157	1½	675	Own	L	6	3¼x3¾	193.0	25.3	65@3400	C	Fed	Own	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	235	157	3050	20x6.00B	20x6.00DB

GENERAL NOTATIONS

***†REFERENCE MARKS** apply to individual lines only and explanations are given under the subdivision for each company in the "SPECIAL NOTATIONS."

CAPACITIES given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight in pounds.

ENGINE—Bud, Buda; Con, Continental; Cum-D, Cummings-Diesel; Her, Hercules; Lyc, Lycoming; Pont, Pontiac; Wak, Waukesha; Wis, Wisconsin; Hall, American Car & Foundry; Ster, Sterling Engine Co

VALVE ARRANGEMENT—L, "L" head; H, in head, O, overhead; S, sleeve.

TYPE OF CAMSHAFT DRIVE—G, gear; C, chain.

RADIATOR MAKE—G&O, G. & O. Mfg. Co.; Per, Perfex Corp; Long, Long Mfg Co.; Har, Harrison Radiator Corp; Fed, Fedders Mfg. Co.; McC, McCord Radiator & Mfg. Co.; Mod, Modine Mfg. Co.; Hex, Hexcel Radiator Co. Yo, Young.

CLUTCH MAKE—Jon, Jones Clutch & Gear Co.; Ful, Fuller & Sons Mfg. Co.; Borg, Borg & Beck Co.; Br-L, Brown Lipe Gear Co.; Rock, Rockford Drill & Machine Co.; Cov, Covert Gear Co.; Long, Long Mfg. Co.; Detr, Detroit Gear & Machine Co.; Mer, Merchant & Evans; Hel, Merchant & Evans.

UNIVERSALS MAKE—Spic, Spicer Mfg. Co.; Bio, Blood Bros. Machine Co.; Sup, Superior Universal Products; Un, Universal Products Co.; Cle, Cleveland Steel Products Corp.; Pet, Peters; Opt, optional; Mec, Mechanics Machine Co.

STEERING GEAR MAKE—Ross, Ross Gear & Tool Co.; Han, Hannum Mfg. Co. Sag, Saginaw Steering Gear Co.; Gem, Gemmer Mfg. Co.; Col, Columbus Gear & Pump Co.; W-G, Warner Gear Corp.

CARBURETOR—Car, Carter; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; Zen, Zenith-Detroit.

FUEL FEED—Gra, gravity; Vac, vacuum tank; P, fuel pump.

ELECTRICAL SYSTEM — AB, American-Bosch; Aut, Electric Auto-Lite; Eis, Eisemann; L-N, Leece-Neville; NE, North East; RB, Robert Bosch; DR, Delco-Remy.

TRANSMISSION—Br-L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-G, Warner Gear; Cot, Cotta Gear Co.; Cla, Clark Equipment Co.

REAR AXLE—Cla, Clark Equipment; Col, Columbia; Est, Enton; Pont, Pontiac; Sal, Salisbury; Tim, Timken; Wis, Wisconsin.

FINAL DRIVE—IG, internal gear; St, straight bevel; Sp, spiral bevel; Wo, worm; 2R, double reduction; Ch, chain; S-T, semi-transverse.

TYPE OF SERVICE BRAKES—

B4IM, Bendix, 4 wheel internal mechanical; B4MV, Bendix, 4 wheel, mechanical, vacuum: B6IA, Bendix, 6 wheel, internal, air; B4IMV, Bendix, 4 wheel internal mechanical, vacuum: BO4IMV, Bendix, own, 4 wheel, internal, mechanical, vacuum: BrIA, Bendix, operating on 4 rear wheels, internal air; BW4IM, Bendix front, wheels, internal air; BW4IM, Bendix front, Wisconsin rear, 4 wheel, internal, mechanical: BE4IM, Bendix front, Eaton rear, 4 wheel, internal, mechanical; B4IH, Bendix 4 wheel, internal, hydraulic.

CB4IM, Columbia, Bendix, 4 wheel, internal, mechanical: C4IM, Columbia, 4 wheel, internal, mechanical; K2IM, Clark, 2 wheel, internal, mechanical: CR4IA, Christensen-Relay, 4 wheel internal, air.

L4IHVA, Lockheed, 4 wheel, internal, hydraulic, vacuum, air; LO4ID, Lockheed, own, 4 wheel, internal, drive shaft; LO4IV, Lockheed, own, 4 wheel, internal, vacuum, LT4DV, Lockheed, Timken, 4 wheel, drive shaft, vacuum; L4IH, Lockheed 4 wheel, internal, hydraulic; L4IHA, Lockheed 4 wheel, internal, hydraulic, air; L4IHV, Lockheed, 4 wheel, internal, hydraulic, vacuum; LT4IHV, Lockheed, Timken, 4 wheel, internal, hydraulic, vacuum; LT4IVA, Lockheed, Timken, 4 wheel, internal, vacuum, air; L6IHV, Lockheed, 6 Wheel, internal, hydraulic, vacuum; L6IH, Lockheed, 6 wheel, internal, hydraulic.

O2IM, Own, 2 wheel, internal, mechanical; O2IV, Own, 2 wheel, internal, vacuum: O4IA, Own, 4 wheel, internal, air; O4IH, Own, 4 wheel, internal, hydraulic; O4IHV, Own, 4 wheel internal, hydraulic, vacuum: O4IM, Own, 4 wheel, internal, mechanical: O4IV, Own, 4 wheel, internal, vacuum; O4M, Own, 4 wheel, mechanical: O2XM, Own, 2 wheel, external, mechanical; O4XM, Own, 4 wheel, external, mechanical: O6IA, Own, 6 wheel, internal, air; OJXM, Own, jack shaft, external, mechanical; OL4IHV, Own, Lockheed, 4 wheel, internal, hydraulic, vacuum; OPX, Own, propeller shaft, external; OPXM, Own, propeller shaft, external, mechanical: OPM, Own, propeller shaft, mechanical; ORIV, Own, rear wheels, internal, vacuum; OTIHV, Own Timken, internal, hydraulic, vacuum.

S4IM, Steeldraulic, 4 wheel, internal, mechanical.

T4rIA, Timken, operating on 4 rear wheels, internal, air; T4IA, Timken, 4 wheel, internal, air; T6IA, Timken, 6 wheel, internal, air: T2IMV, Timken, 2 wheel, internal, mechanical, vacuum.

W4I, Westinghouse, 4 wheel, internal; W4IA, Westinghouse, 4 wheel, internal, air; 46IA, Westinghouse, 6 wheel, internal, air; 4IA, 4 wheel, internal, air: 41H, 4 wheel, internal, hydraulic; 4M, 4 wheel, mechanical.

-T, True-stop. *Models on which True-stop is optional.

WHEEL BASES given are standard, but optional wheel bases are available in many cases.

***CHASSIS WEIGHT** according to Automotive Daily News formula, which is the chassis with gas, oil, water and spare tire, but without cab or other equipment.

TIRES—B, balloon; D, dual, S, solid; P, pneumatic.

SPECIAL NOTATIONS

AUTOCAR

*For tractor use only.
**Six wheeler driving from 4 rear wheels.
***Engines in these models are located under driver's seat.

BROCKWAY

*Models equipped with twin ignition.

CHEVROLET

Utility model available on 131-inch wheel base with chassis weight of 2,760 pounds and equipped with dual rear wheels.

DIAMOND T

*Six-wheelers.

Additional standard wheel base available as follows:

510	158	750	167, 192
504A	166½	801	180½, 199½
506A	174	1201	174½, 180
603	157, 179	1602	174½, 180
606B	177½	1603	184

DODGE

*Models F40, F41, F61 and F62 can be had with double drop frame.
†Six wheelers.

FEDERAL

†Six-wheelers.
*Also rated in pounds at total allowable weight as follows:

D 3	8,500	A 600 S W	20,000
E 3	8,500	A 600 D	20,000
F 7	10,000	U	21,000
F 8	11,500	U 6 D R	21,000
A 6	13,500	A 6 S W	18,500
A 6 T	15,000	C 7	24,000
A 6 T W	15,000	C 7 W	24,000
T 3 W	14,000	C 8	24,000
T 8 W F	15,000	C 8 W	24,000
D 2 S W	12,500	X 8	30,000
E 2 S W	12,500	X 8 D R	30,000
D 2 D	12,500	X 8 R	30,000
2 E D	12,500	X 8 R D R	30,000
A 600	15,000	A 600	15,000
A 600 T	17,000	A 600 T	17,000
A 600 T W	17,000	A 600 T W	17,000
A 600 T D R	17,000	A 60 T D R	17,000
T 10 B	18,000	A 600 S W	20,000
T 10 W	18,000	A 600 D	20,000
T 10 D R	18,000	T 3 W F A	16,000

†Both the four and six cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.

Model T 10 SW also available in 206 and 224 inch wheel bases.

GENERAL MOTORS TRUCK

*Capacity indicated is the Straight Rating (combined weight of chassis body, equipment and pay load) for which each chassis is designed and guaranteed to satisfactorily operate under average conditions. The size of the tires used does not affect this Straight Rating, but to secure maximum tire mileage it is suggested that the total gross weight be limited to a "recommended gross weight" for each tire equipment based on tire capacity. Prices cover base chassis and vary with wheel base and tire combinations. The number of wheel base lengths, tire types, range of "recommended gross weights" and resulting pay load range (assuming nominal body allowance) for each model follow:—

Note: Models T-15 to T-61, inclusive, are available for export only as coach chassis.

Model	Wheel Bases	Tire Types	Range of "Rec. Gross Pay Load Weights"	Range
T-15	3	10	4500- 6500	½-1½
T-18	2	..	7500- 8200	1½-2
T-19	4	..	7500-10000	1½-2½
T-23	2	..	8500-10000	2-3
T-25	3	17	6800- 9000	1½-2
T-26	4	..	9000-11000	2-3
T-30	3	18	10000-12500	2-3
T-31	4	..	11000-14000	2½-4
T-42	4	12	12000-15000	2½-4
T-44	4	12	12000-16000	3-4½
T-45	4	..	13500-16000	3-4½
T-51	4	..	16500-19000	4-5½
T-60	4	18	18500-22000	5-6½
T-61	4	..	19500-22000	5-6½
T-82	4	12	19000-24000	5-7
T-83	4	..	20000-25000	5-7½
T-85	3	..	25000-30000	6-8
T-90	3	..	22000-28000	5-7½
T-95	3	..	30000-40000	7-11
T-110	3	..	32000-40000	8-12
T-130	3	..	42500-50000	12-15

Optional rear axle gear ratios available for all models, except Model T-18. Double reduction axles available for Models T-45, T-51, T-60, T-61, T-82, T-83 and T-95.

GRAMM

Series	Straight Rating	Wheel Base	Pay Load Range
AX 4	8,000	157	1 to 1½ tons
AX 6	8,000	157	1 to 1½ tons
BX 4	10,000	157	1½ to 2 tons
BX 6	10,000	157	1½ to 2 tons
CX 4	12,000	157-180	2 to 3 tons
CX 6	12,000	157-180	2 to 3 tons
B	12,000	157-174	1¾ to 2½ tons
CXH	13,400	157-180	2 to 3 tons
C	14,000	145-196	2 to 3 tons
EX	16,300	145-210	3 to 4 tons
D	17,000	145-196	2½ to 4 tons
E	20,000	145-224	3 to 4½ tons
ED	20,000	145-210	3 to 4½ tons
EY	.....	.....	3 to 4 tons
G	24,000	165-235	4 to 6 tons
G 8	24,000	165-235	4 to 6 tons
GY	.....	.....	4 to 5 tons
GW	28,000	157-240	5 to 7½ tons
GWD	30,000	157-240	5 to 7½ tons
HY	.....	.....	5 to 6½ tons

†Both the four and six-cylinder are also offered in 157-inch wheel base at $1,145 and $1,345 respectively.

Larger engines and corresponding transmissions, clutches, propeller shaft, axles, etc., are provided on all models of Gramm trucks at extra cost when type of service requires them. Wheel bases, cab to rear of frame, and cab to center line of axle designations may change to suit the special requirements.

Wisconsin double reduction axles are available in all series, except AX and EX.

Gross vehicle weight indicated for each model in the table is the straight rating (combined weight of chassis, body, equipment and payload) for which the chassis is designed and guaranteed to satisfactorily operate under average conditions. Tire sizes should be selected within the tire manufacturers rating to carry the gross load desired which must not exceed the straight rating.

INDIANA

*Six-wheelers.

INTERNATIONAL

Brake H. P. values given for International motor trucks are net values obtained with all standard equipment accessories running.

PIERCE-ARROW

*Optional final drive on models except "S" and "T" series.
†Six-wheelers.

REO

Model 2 D can be secured in 166-inch wheel base at $1,095.
†Heavy duty.

STEWART

Model 41X also supplied 134-inch wheel base.

Models 42X and 43X also supplied in 145, 160, 176-inch wheel base.

Model 29XS can be supplied in 135, 160, 176 and 190-inch wheel base.

*Models 18X and 32X can be supplied in 148, 190 and 220-inch wheel base
*Models 19X, 31X and 27XS can be supplied in 148, 172, 190, 220 and 235-inch wheel base.

As optional equipment Models 18X, 19X, 31X and 27XS can be supplied with Timken dual reduction rear axle.

Models 38-8, 38-6, 48-8 and 58-8 can be supplied in 160, 170, 180, 196, 226 and 241-inch wheel base and worm axle.

WHITE

Six-wheelers.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Fleet Owners' Responsibility In Keeping Their Trucks in Safe Operating Condition Stressed

(Continued from Page 6)

which way the fleet owner can get satisfactory service at least cost.

Only the largest fleets are likely to find it profitable to do complete engine overhauling, where cylinders need to be rebored or reground and new pistons fitted, or to do body repairing and painting, or welding and heat treatment.

Too much cannot be said against the common and bad practice of inspecting trucks only after drivers have reported troubles. Nothing should be taken for granted, not even when the driver has reported the vehicle O. K.

Of first importance is that inspections should be made regularly. Brakes, steering gears and tires should be inspected daily no matter how little the car is run the day before. Inspection of other parts for repairs that are not so necessary to safety as to continued and economical operation are usually made at specific mileage intervals. In other words, the driving mechanism should be inspected according to the miles of use and the stopping and control mechanism on a time basis.

Next to regularity in inspection is thoroughness. Unfortunately the more regularly inspections are made the more perfunctory they are likely to became. The best way to insure thoroughness is to provide the inspector with a printed form, itemizing the parts that must be examined, requiring him to check each item as he inspects it on that form either O. K. or indicating the defect. Each form should be dated when the inspection is made. The reports showing need of repairs may be used as work cards for the mechanical force or outside shop. After the defects are corrected, that should be noted and dated on this form, or the separate work order if one is used, and filed. This procedure affords a record that may be very valuable in subsequent investigations of accidents or mechanical failures to fix the responsibility.

A moot question is how much the driver should be expected or allowed to do on the truck himself. Some say, "Absolutely nothing," maintaining that his responsibility ends with his reporting anything out of order. If he breaks down on the road he should telephone the shop to send some one to come and get him going or tow him home. A few go so far as not to allow a driver even to change a tire. This exception generally has to be made to save excessive delay where trucks operate to any considerable distance from the garage. Otherwise it is good policy to forbid the driver to try to help himself out of mechanical trouble. Even if he is qualified as a mechanic, it is wiser to keep the responsibility for the mechanical condition of the truck in the maintenance crew.

On the other hand, the shop should not be held entirely responsible, in spite of their inspection work, for overlooking corrections of faults that should have been reported by the driver. There should be a very rigid rule, therefore, that the driver must report any defect of which he is aware. There are two practices commonly followed, each of which has its advocates, one to report O. K. item by item or in toto; the other to report only the complaints. The end is accomplished either way if the defect is corrected, but if an unreported fault develops some feel that a driver can be censored more severely if he has reported the condition as O. K.

N. A. F. C. ANNOUNCES PROGRAM FOR MEETING

(Continued from Page 1)

A. F. C. Victor L. Brown, Milwaukee, presiding. Roll call, action on minutes, reports of officers, report of committee on resolutions, reports of standing and special committes, election of directors.

4.00 P. M.—Open discussion.

6.00 P. M.—Adjournment for the day.

TUESDAY EVENING

Club Forest

8.30 P. M.—Dinner dance and special entertainment (formal.)

11.00 P. M.—Floor show.

WEDNESDAY MORNING, DEC. 7

10.00 A. M.—"More Floor Plan and Other Legal Problems," by John W. Creekmur, attorney and counselor, Chicago.

10.30 A. M.—Open discussion.

12.00 M.—Recess for luncheon.

WEDNESDAY AFTERNOON

1.00 P. M.—Golf, races, Harbor boat trip, sight seeing, etc.

5.30 P. M.—Private dining room, Jung Hotel, informal dinner for directors organization of new board.

8.00 P. M.—Members report to dressing room to don costumes.

9.00 P. M.—Beginning of carnival ball.

12.00 P. M.—Midnight supper; dancing.

THURSDAY MORNING

Thursday morning's session will be given over to open discussion, with the following topics recommended for consideration: "Future of Finance Business—Motor and Other," "The Depression and Our Way Out," "Methods of Obtaining Money at Reasonable Cost," "Obtaining More Favorable Discount Rates for Finance Company Paper," "Eligibility of Finance Company Paper for Rediscount at Federal Reserve Banks," "Increasing Volume by Diversified Financing and Otherwise," "What Lines, Other Than Autos, Can Small Company Successfully Finance?" "More Efficient Operation—Short Cuts and Savings—for Finance Companies," "Can Wholesale Financing Be Made Reasonably Sale and Profitable?" "Collision Insurance Coverage," "Credits, Collections and Repossessions"; "Problems Connected With the Sale of Repossessed Cars," "Standard vs. Irregular Terms," "Rebates to Dealers," "The Automobile Dealer and His Future," "Overallowances on Used Cars," "Limiting Advances on Used Cars," "Limiting Advances on New Cars," "Distinguishing Between Discount and Other So-called Finance Companies."

Speakers at this session to whom subjects have been asigned are: Solon R. Featherston, vice-president R-F Finance Corporation, Wichita Falls: "Reducing Insurance Losses Through Co-operation Between Finance and Insurance Companies"; G. E. Norgan, vice-president Eau Claire Citizens Loan & Investment Company, Eau Claire: "Co-operation of Finance Companies"; H. S. Swift, president Motor Mortgage Company, Tulsa: "Know Your Customer"; C. H. Warrington, president Credit and Finance, Inc., Washington, D. C.: "Insurance As It Relates to Installment Financing."

Others who will take part in the open discussions are: P. W. Haberman, vice-president and general counsel Commercial Investment Trust, New York; William M. Klinger, president William M. Klinger Company, Inc., San Francisco; Walter E. Lindsay, president Mountain Finance Corporation, Denver; A. H. Rosenberg, vice-president Mercantile Discount Corporation, Chicago; L. M. Selver, president Automobile Banking Corporation, Philadelphia; R. Semmes, president Home Loan and Finance Company, Huntsville, Ala.

A. P. I. DIRECTORS MEET IN NEW YORK DECEMBER 8

New York, Nov. 29.—The new executive committee of the American Petroleum Institute, elected at the institute's annual meeting in Houston, November 16, will hold its first New York meeting on Thursday, December 8, at institute headquarters, 250 Park Ave.

AUTO-GASOLINE TAX TAG DRIVE STARTED

New York, Nov. 29.—Although distribution so far has been limited, yellow and black tags reading, "Reduce the Gas Tax," already have made tehir appearance on motor vehicles throughout the country.

SCHOOL BUS ORDER

Dayton, O., Nov. 29. — Fred Schmitt, general manager of the Miami Valley Motor Company, distributor of Reo passanger cars and speed wagons in Dayton, O., reports the sale of eight Reo school buses to the Beaver Creed Centralized School District. The bodies, each having a capacity of fifty children, were built by the Burkett Closed Body Company of Dayton.

Cumulative New Commercial Car Registration Statistics, October, 1931

This table is repeated for comparative purposes only. Figures for October, 1932, will be found on Page 8

States	Autocar	Brockway	Chevrolet	Diamond-T	Dodge	Federal	Ford	G. M. C.	Indiana	Interna-tional	La France-Republic	Mack	Pierce-Arrow	Reo	Sterling	Stewart	Studebaker	White	Willys-Overland	Miscella-neous	Totals	States
Alabama, 1931			152		14	4	108	13		41	1	2		6			6	7	4		358	Alabama, '31
Arizona, 1931			26		1		43	2		1							3		1		77	Arizona, 1931
Arkansas, '31			123		9		108	2		35		3									280	Arkansas, '31
California, '31	7		397	4	79	3	744	57		46	2	11		44	12	1	17	11	7	68	1510	California, '31
Conn., 1931	4	1	180	1	33	11	202	16		31	5	7	2	27		4	4	6	4	11	549	Conn., 1931
Delaware, 31	1		24				26	2		4		1		1		1				1	61	Delaware, 31
Florida, '31		1	218		7	1	221			12		2		7				1			470	Florida, '31
Georgia, 1931	1	4	147		4		142	3		7	1	2		2			2	2	1		318	Georgia, 1931
Idaho, 1931			19		9		42	1		11				1			3	3	2	1	92	Idaho, 1931
Illinois, 1931	1		382	36	28	4	324	24		70		2		14	6		13	1	9	12	926	Illinois, '31
Indiana, '31		3	211	1	13	1	205	17		55				14		1	7		10	12	550	Indiana, '31
Iowa, 1931			211	4	14		157	9		34		1		17			12		10	2	471	Iowa, 1931
Kansas, 1931		2	147	7	16	1	133	10		28	1	5		3			3	4	2	8	370	Kansas, 1931
Kentucky, '31		5	140	6	15	4	112	9		41				12		2	7			3	356	Kentucky, '31
Louisiana, '31			154	2	12		156	4		40							1	3	2		374	Louisiana, '31
Maine, 1931		2	91	1	18		116	4		18				7	1		13	1	2		274	Maine, 1931
Maryland, '31	8	7	133	5	17	1	123	13		28		28		14			3	15	6	3	404	Maryland, '31
Mass., 1931	23	8	275	4	51	5	465	99		45	4	10		38	3	2	16	14	3	9	1074	Mass., 1931
Michigan, 31	2		218	3	22	4	329	29		29	3	1	2	18			6		6	12	684	Michigan, '31
Minn., 1931			190	9	13	4	192	10		49		2		18	2	2	16	6	15	3	531	Minn., 1931
Mississippi, '31			92		4	1	55	2		15				2					1		172	Miss., 1931
Missouri, 1931	1	3	297	6	27	5	235	16		49	1	3		9		1	8	7	7	21	696	Missouri, '31
Montana, '31			40		5	1	89	4		35		1		2			1		2	2	182	Montana, '31
Nebraska, '31			99		14	1	121	9		39		1		4			4	1	2	1	296	Nebraska, '31
Nevada, 1931			16		2		15			1				2							36	Nevada, 1931
N. Hamp., '31	1	1	54	2	1		70	1		6	1	4		1			1		2	2	147	N. Hamp., '31
N. Jersey, '31	4	7	309	6	44	6	366	31		59		12		33	1	8	9	9	2	23	929	N. Jersey, '31
N. Mexico, '31			41	3	2		37	1		14				1							99	N. Mexico, '31
New York, '31	52	73	809	66	148	16	1137	115		181	6	72	3	91	7	58	32	63	30	68	3027	New York, '31
No. Ca'lina, '31	2		235	12	21		287	8		26	2	1		5			1	4	4	84	692	N. Ca'lina, '31
N. Dakota,'31			18		4		19			23				1			2		4	1	72	N. Dakota, '31
Ohio, '31	2	5	367	11	37	7	488	72		90	4	3	1	32		6	24	10	21	40	1220	Ohio, '31
Oklahoma, '31		3	161		16		108	13		17				6			1	1	2	3	331	Okla., 1931
Oregon '31			45		7	4	84	8		9	1		1	2	1			4	2	1	169	Oregon, '31
Penn'vania '31	34	16	603	17	141	10	750	62		150	6	34		75	8	33	19	9	28	47	2042	Pen'vania, 31
R. Isle., '31	5		33		4	3	90	17		5				5		1	2	1		2	168	R. Isle., '31
S. Carolina, '31			99		6	3	79	3		4		9		4			1			14	222	S. Ca'lina, '31
S. Dakota, '31			27	1	3		24			5				2			2		2		66	S. Dakota, '31
Tenn., 1931			170	1	14	8	127	12		31				3			2	5	6	1	380	Tenn., 1931
Texas, 1931			812	6	32	3	565	10		166		2	1	12			23	5	5	8	1650	Texas, 1931
Utah, 1931			45		2		46			10				5			4		1		113	Utah, 1931
Vermont, '31			35		6		36	2		10							1		3	1	94	Vermont, '31
Virginia, 1931	5	3	252	3	13	1	186	14		13		1		11			4	8	3	1	518	Virginia, '31
Wash., 1931	2		78	3	7		74	9		13		2		2			9	1	3	11	214	Wash., 1931
W. Virginia, '31		1	128		19		115	8		21				8			5	1	8	7	321	W. Va., '31
Wisconsin, '31			191	7	17	3	172	14		30	1		1	13	3	1	10	1	11	5	480	Wis., 1931
D. of Col., '31	2	2	74	6	6	1	90	6		11		1		1			2	4	1	10	217	D. of Col., '31
Totals, 1931	157	147	8570	233	977	116	9413	761	*	1658	39	223	11	575	44	121	299	208	234	496	24282	Totals, '31

*Combined with Brockway.